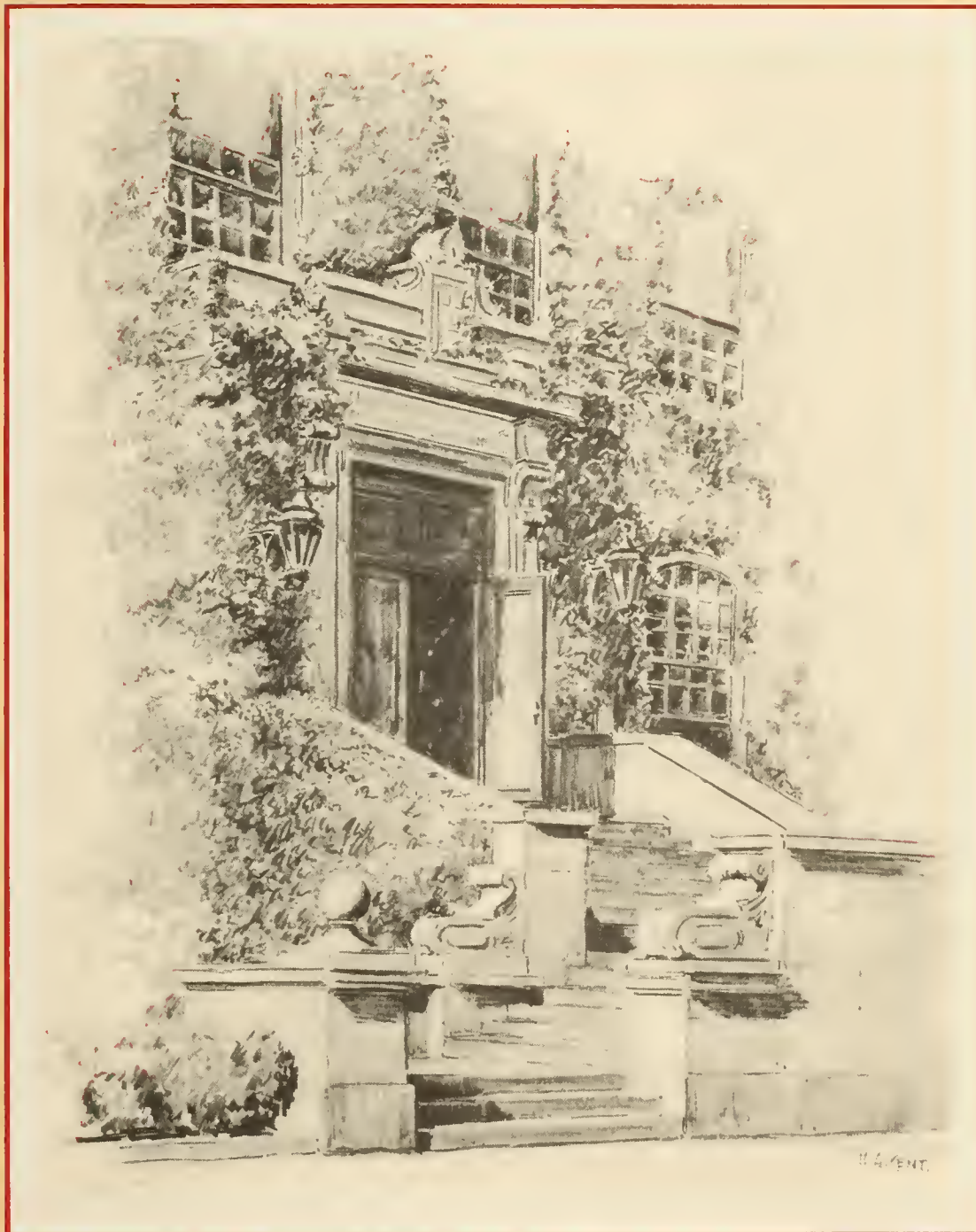
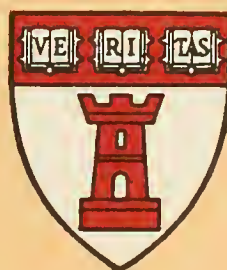


# Harvard School of Dental Medicine



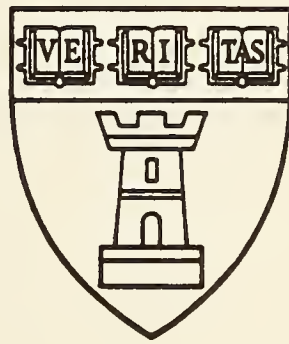
1989-90





# HARVARD SCHOOL OF DENTAL MEDICINE

## OFFICIAL REGISTER



*In accordance with Harvard University policy, the School of Dental Medicine does not discriminate against any person on the basis of race, color, sex, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or handicap in admission to, access to, treatment in, or employment in its programs and activities.*


August, 1989  
Harvard School of Dental Medicine

*The information contained in the Harvard School of Dental Medicine Official Register is applicable to the academic year 1989-1990. Every effort has been made to ensure that this information is accurate at the time of publication; however, the School reserves the right to make corrections and changes without notice to courses of instruction, programs, degree requirements, tuition and fees, and any other information in accordance with established academic procedures.*

*The Harvard School of Dental Medicine is accredited by the Commission on Dental Accreditation of the American Dental Association.*

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# MESSAGE FROM THE DEAN

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*Dean Paul Goldhaber*

As the first university dental school in the country, the Harvard School of Dental Medicine has continuously emphasized the close relationship between medicine and dentistry and the need for expanding the biomedical research knowledge upon which new approaches to the prevention and treatment of oral disease are based. Like other Harvard professional schools, it prides itself on educating leaders for all areas of its profession, and on training the teachers for this health field. Operating as a small school within both a great university and one of the world's leading medical centers, it has been able to emphasize educational innovation and new ways of opening the academic riches of Harvard and its affiliated institutions to highly motivated students. HSDM strives to train dentists who can effectively participate in the development and management of the new systems of oral health care which will be evolving in an age of consumerism, third-party payment, and increasing regulation by all levels of government.

In analyzing the problems facing the public and the dental profession, the School sees in particular a continuing need for better methods of prevention and treatment of oral diseases in order to meet this global health problem. The dental faculty also sees as a great challenge the need to integrate dental care into comprehensive health care programs.

The School therefore believes that, for its future leaders, the profession urgently needs broadly educated dentists who, in addition to being outstanding clinicians, can develop and teach the new biomedical knowledge needed in dentistry; can interact effectively with their medical colleagues in hospitals and other systems of comprehensive health care; and can represent dentistry ably in the public policy debates and decisions which are shaping the future of the profession.

In 1979 the School introduced a five-year predoctoral curriculum which added a year of biomedical research or training in public health, public policy, or health policy and management to the intensive basic science and clinical instruction previously provided in the four-year D.M.D. program. Thus, whether or not HSDM graduates pursue postgraduate training, they will have the background to make a continuing contribution to our knowledge of oral disease and to practice dentistry as part of total health care.

The School of Dental Medicine has in recent years developed several new postdoctoral programs in order to develop clinical scholars: a four-year **Doctor of Medical Sciences in Oral Biology** program to provide strong basic science training (which can be linked with clinical specialty training) for dental teachers and researchers; a five-year **Oral Surgery/MD/General Surgery** program providing a sound background in medicine, general surgery and oral surgery for a new breed of oral surgeons; a three-year **Master of Medical Sciences in Oral Biology** program; and a new group of three-to four-year postdoctoral programs combining advanced clinical training and research in the area of **Health Care Research** with courses leading to a Harvard degree in Public Health or Public Policy from other Harvard graduate schools.

On the basis of its favorable experience in the Oral Surgery-M.D. program, the School has developed a further option for HSDM graduates in other specialty areas to obtain an M.D. degree at the Harvard Medical School and to take an appropriate medical residency. This should be particularly helpful background for hospital-based clinicians and researchers working on medically



compromised patients in such fields as oral medicine and oral pathology, pediatric dentistry or general dentistry.

The School of Dental Medicine thus has several objectives: (1) to develop leaders for the profession through its continuum of predoctoral and postdoctoral programs of dental education, (2) to make significant contributions to the international research effort against oral disease through multidisciplinary biomedical research and clinical studies designed to develop new modes of prevention and therapy, (3) to explore the interrelationships between oral and systemic disease by promoting total health care based on a deeper understanding of these relationships, and (4) to raise the standards of health care by new systems of delivery and prompt application of improved prevention and treatment methods.



— H S D M —





# HARVARD UNIVERSITY AND THE MEDICAL AREA SCHOOLS

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## HARVARD UNIVERSITY

Harvard College opened its doors in Cambridge, Massachusetts in 1636 with an enrollment of 12 students and one Master to teach all subjects. Its mission was to educate the religious and intellectual leaders of the newly settled New England colonies. Expanding its size and extending its geographical boundaries during the 19th century, the College added graduate and professional schools which now number ten. Four of these are located in the city of Boston: the Business School, the School of Dental Medicine, the Medical School, and the School of Public Health. The latter three form the nucleus of the Harvard Medical Area which also includes some of the world's finest affiliated teaching and research hospitals.

Today Harvard is one of the world's outstanding universities with a total graduate and undergraduate enrollment of approximately 17,000 degree candidates. Its mission, however, has remained essentially the same though considerably broadened in scope: that is, to educate the leaders of our complex, international society.

Harvard University, with its beautiful Georgian architecture and deeply rooted academic traditions, has maintained a strong link with its New England past. But the makeup of its student population has broadened from one dominated by the Northeast to one attracting a wide representation from throughout the United States and from over 100 countries. Within its ranks can be found some of the world's most gifted students and productive scholars. It constantly strives to provide an educational environment in which students and faculty alike can grow and work and dream.

## HARVARD MEDICAL AREA SCHOOLS

The Medical Area includes the School of Dental Medicine, the Medical School, and the School of Public Health, as well as affiliated hospitals and research centers.



## Harvard School of Dental Medicine

The first university dental school in the country, the Harvard Dental School, was founded in 1867. It was also the first to be set up in close affiliation with a medical school (the Harvard Medical School) and to make the full scholarly and scientific resources of a university available to dental education.

Earlier attempts in Maryland and elsewhere to establish chairs of dentistry within existing medical schools had failed, causing dentistry to set up a separate system of education. In this case, the newly formed Massachusetts Dental Society approached Harvard with a proposal for a school, and in March 1867 a special committee appointed by the Harvard Medical School recommended action, stating:

*Dentistry has become with the past quarter of a century a most important art, a knowledge of which supposes not only mechanical skill, but a thorough acquaintance with the processes of dentition, physiologically and pathologically considered. Hence arises the necessity for a knowledge of the general principles of anatomy, physiology, surgery, chemistry, and materia medica, to which should be added some knowledge of the theory and the practice of medicine. A medical school already established is therefore the best place at which these various studies can be attended to.*

The School was founded near the Massachusetts General Hospital in Boston, with operative dentistry being performed in the outpatient department. Dr. Nathan Cooley Keep, who as first president of the Massachusetts Dental Society had originally proposed the School, was named Dean. Oliver

Wendell Holmes, Parkman Professor of Anatomy and Physiology, was a member of the original faculty and held students spellbound by his erudition and wit.

The first graduating class in 1869 - which attended for two academic years of four months each - numbered six men. One of these was Robert Tanner Freeman, the first black in the United States to receive a dental degree. In 1878 George F. Grant, a member of the second graduating class, became the first black to serve on the Harvard faculty, teaching at the Dental School and maintaining a dental practice on Charles Street in Boston, with Harvard's President Charles W. Eliot among his patients.

In 1909 the School moved to its present location in the Longwood Avenue area of Boston. Teaching affiliations were formed with the Children's Hospital, the Boston City Hospital, the Peter Bent Brigham Hospital, and subsequently with numerous other health centers.

From its founding, the Harvard Dental School has led many times in setting standards of scholarship for dental education. Its faculty members have also pioneered in developing new standards of clinical care, as during World War I, when Harvard dentists serving in France under Dr. Varaztad Kazanjian '05, brought a new era of oral and plastic surgery to the treatment of facial wounds.

In 1940, under President James B. Conant, the School was reorganized as the Harvard School of Dental Medicine to place stronger emphasis on the biological basis of oral medicine and to institute multidisciplinary programs of dental research. A unique feature of the current predoctoral curriculum places dental students in joint classes with medical students for two years of basic science, and for an introduction to clinical medicine on the wards of Harvard teaching hospitals. President Conant's plan to offer the M.D. degree also continues as an option linked with advanced training in the various dental specialties.

In 1957, the School of Dental Medicine was awarded National Institute of Dental Research training grant funding and began to expand and enhance its postdoctoral education programs, combining advanced clinical and biomedical research training for dentists planning careers in academic dentistry. Other postdoctoral programs have been developed in recent years under the

leadership of the present dean, Dr. Paul Goldhaber. These include a four-year Doctor of Medical Sciences in Oral Biology program; a five-year Oral Surgery/M.D./General Surgery program; and a group of three-to-four-year, joint-degree programs combining advanced clinical training and research in health-care systems, health policy or biomedical sciences. In addition, an innovative five-year predoctoral curriculum, introduced in 1979, adds a year of biomedical research or training in public health and public policy to the traditional basic science and clinical components.



## Harvard Medical School

The Medical School, the third to be established in the United States, opened in 1782. Like the Harvard School of Dental Medicine's quiet beginnings, instruction commenced with only three professors and a handful of students in the basement of Harvard Hall in Harvard Yard.

The first degrees of Bachelor of Medicine from Harvard University were awarded in 1788. Until 1811, both the Bachelor of Medicine and Doctor of Medicine degrees were conferred, the former upon completion of medical school, the latter on examination at least seven years after graduation. All graduates since 1811 have received the Doctor of Medicine degree.

In the first decade of the 19th century, the medical school was moved from Cambridge to Boston. By 1816, it had its own new building constructed, and a separate Faculty of Medicine was established by a vote of the Harvard Corporation. Between 1816 and 1858, the school bore the title "The Massachusetts Medical College of Harvard University".

In 1869, a great period of reform in medical education began under the leadership of Harvard's president Charles William Eliot. A course of instruction was instituted which included lectures, recitations, clinical teaching, and practical exercises over a three-year period. The vigorous growth which transpired soon brought a need for additional space, and the buildings which now form the present Longwood Avenue quadrangle were opened in 1906.



From its beginnings in a basement with a faculty of three, to its present status as a complex network of clinical and preclinical departments, laboratories and affiliated hospitals, a full- and part-time teaching staff of almost 3000 and a student body of over 700 men and women, the Harvard Medical School has sought to combine growth with excellence in medical education, patient care, and scientific investigation.



## Harvard School of Public Health

The School of Public Health is the youngest of the three professional schools in the Harvard Medical Area. Postgraduate education in public health had been steadily increasing at Harvard University for more than two decades before the actual founding of the School in 1922. In 1909, a Department of Preventive Medicine and Hygiene was established at the Medical School - the first such department in the United States. The degree of Doctor of Public Health was first conferred in 1911. Also in that year, a Department of Sanitary Engineering was established at the Graduate School of Engineering. In 1913, the Department of Tropical Medicine, and in 1918, the Division of Industrial Hygiene, with clinical and laboratory facilities, were organized at Harvard Medical School.

In 1913, the Harvard-Massachusetts Institute of Technology School for Health Officers was formed under the joint management of the two universities. This school operated until the fall of 1922, when it was superseded by the Harvard School of Public Health. In the early years of the School's operation, several of its departments functioned as joint departments with counterparts in the Medical School, sharing facilities, faculty and budgets. In 1946, the Public Health School was separated administratively and financially from the Medical School and became an autonomous unit of Harvard University. It continues to cooperate with the Medical School in teaching and research, and has also developed close ties with the School of Dental Medicine, the Graduate School of Arts and Sciences, the John F. Kennedy School of Government, and the Graduate School of Business Administration.

The primary mission of the School of Public Health is to carry out teaching and research aimed at improving the health of population groups throughout the world. The School emphasizes not only the development and implementation of disease prevention and treatment programs, but also the planning and management of the systems that are involved in the delivery of health services in this country and abroad.





# ADMISSION AND REGISTRATION

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## APPLICATION, SELECTION, AND ACCEPTANCE PROCEDURES

Harvard participates in the American Association of Dental Schools' Application Service and all applications should be made through this service. The address is: AADSAS, 1625 Massachusetts Ave. N.W., Suite 101, Washington, D.C. 20036. As soon as possible after sending the appropriate materials to the Service, each applicant should submit directly to the Harvard School of Dental Medicine an application fee of \$60, official high school and college transcripts, letters of recommendation from the undergraduate school's pre dental advisory committee (if none exists at the school, then from at least three *senior* science professors) and Dental Admission Test scores.

The selection of students is based on a total appraisal of the suitability of the candidates for the program at Harvard. Factors such as academic achievement in high school and college, performance on the Dental Admission Test, letters of evaluation and personal qualities are weighed in the decision. All decisions are made by the Admissions Committee which includes representation from junior and senior, clinical and basic science faculty, predoctoral and postdoctoral students, women and minorities.

Selection of students is made without restriction based on race, sex, religion, financial resources or residence. Harvard does not discriminate on the basis of handicap. Consistent with Harvard's Affirmative Action Program, women and minorities are encouraged to apply.

Prospective students are urged to apply well before the deadline, preferably from June to September. Personal interviews will be scheduled at the discretion of the Admissions Committee.

The Admissions Office is frequently able to refer potential applicants to alumni contacts who share common academic and career interests. These graduates of HSDM can respond to questions about departments and curriculum and provide information about career opportunities and alumni activities.

## REQUIREMENTS FOR ADMISSION

Listed below are the recommended college credits necessary to insure adequate preparation for professional school and to meet present legal requirements of state licensing boards.

**Biology:** One year of biology which includes adequate laboratory work is required. The combination of one semester of zoology and one semester of botany is acceptable. A satisfactory course must show college credits of approximately eight semester hours.

**Chemistry:** The student should acquire a sound understanding of the basic principles of chemistry, both inorganic and organic. At least eight semester hours of inorganic chemistry and eight hours of organic chemistry are required.

**Physics:** The student should acquire an understanding of the general principles of physical laws and phenomena including mechanics, heat, light, sound and electricity. College credit for eight semester hours is required.

**English:** One year at the college level is required. It is recommended that this include English composition.

**Mathematics:** A one-year course in calculus is required unless it has been taken in high school.

It is also recommended that applicants have at least two or three advanced science courses such as biochemistry, physiology, comparative anatomy, genetics, etc. Study of the social and behavioral sciences, the arts and humanities and a foreign language such as Spanish may also increase the student's awareness of the world in which he or she lives, and thus enhance the ability to practice modern dentistry.

**The Dental Admission Test:** The DAT is given twice a year (April and October), and is required for admission to the Harvard School of Dental Medicine. Performance on the DAT is best when taken soon after completion of the required science courses. For most students this would be April of



the junior year. It is recommended that the test be taken before the senior year to allow for re-taking, if necessary. Applications may be secured from the Division of Educational Measurements, Council of Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

## FINANCIAL AID

Financial aid in the form of loans, scholarships and work/study is available to eligible students at the Harvard School of Dental Medicine. Financial aid is awarded on the basis of need as determined by the Graduate and Professional Schools Financial Aid Service, (GAPSFAS), a federally-approved needs analysis system. The School participates in the Title IV Student Assistance Programs and the Federal Health Professions Educational Assistance Programs. Additional loan and scholarship funds are available through the Dental School and through Harvard University.

Scholarships and loan funds may also be obtained from outside agencies, and students are encouraged to pursue such assistance. Interest rates and repayment provisions for the various loan programs differ considerably, and students are advised to consult the Office of Student Affairs at Harvard School of Dental Medicine before making any commitments.

Financial aid funds for individuals who are not U.S. citizens or permanent residents are extremely limited, and foreign students should anticipate that nearly all of their expenses will have to be met by resources outside the School of Dental Medicine.

Holders of F and J visas are not eligible for financial aid from Title IV Student Assistance Programs (Stafford Guaranteed Student Loans, SLS Loans, Perkins Loans, College Work/Study) or from any other federally sponsored programs.

A Financial Aid Bulletin is published by the Office of Student Affairs and will be mailed to applicants who are invited for an interview.

## Additional Funding Sources for the Fifth Year

In addition to the usual financial aid available to predoctoral students, two additional options offer possible sources of support during the fifth year of study:

First, the North East Regional Board of Dental Examiners permits Harvard students to take its examinations at the end of their **fourth** year of study. This became possible when the School of Dental Medicine agreed to issue an Interim Diploma to each qualified student at the end of the fourth year. The diploma certifies that the student is qualified to take the examination. It is *not* the Harvard D.M.D. degree; the D.M.D. degree is awarded ordinarily after successful completion of the fifth year. However, students who pass the Northeast Regional Board Examinations are eligible to apply for licensure in Massachusetts and once licensed are thus able to practice dentistry. Such students may apply for an elective program which allows them to participate in a special group practice operating at the School on two weekday evenings and on Saturdays. This program allows students to earn income from practice while enhancing their skills in clinical dentistry and practice management.

The second opportunity resulted from a ruling by the National Institutes of Health which agreed to consider members of our fifth-year class eligible to receive research training grant support as postdoctoral fellows in Harvard dental programs having training grants. These training grants pay a stipend plus most tuition costs for at least three years. Students accepted into a Harvard postdoctoral program may also apply for and receive direct research fellowships that pay a stipend and partial tuition costs throughout the three-year postdoctoral program with the fifth year of the predoctoral program serving as the first year of the postdoctoral program. It should be noted that, upon completion of the program, such fellowship support requires a year-for-year "payback" (not counting the first year of support) in the form of full-time employment in an academic institution (dental school, research institute, or teaching hospital) carrying out research and/or teaching, with or without patient-care responsibilities.

Other sources of support during Year V include special foundation scholarships and Harvard School of Dental Medicine scholarships for specific postdoctoral programs. It is of interest to note that more than 50% of the students who have completed the 5-year program were supported by one or more of these sources.

## HOUSING

Housing is generally available for HSDM students in Vanderbilt Hall which is located on Longwood Avenue in the Harvard Medical Area. Vanderbilt Hall will be closed during the entire 1989-90 academic year for extensive renovations but is scheduled to reopen in September of 1990. Alternate housing will be arranged in the interim for first year students.

Inquiries regarding University-owned married student housing should be addressed to Harvard University Housing Office, 7 Holyoke Street, Cambridge, MA 02138. Frequent shuttle bus service is available between Cambridge and the Medical Area.

## REGISTRATION

Registration for predoctoral students is held at the beginning of both fall and spring semesters. The registration process includes demonstration of the payment of term bills and the completion of various written materials as required by the University and the School of Dental Medicine. It is the policy of the School of Dental Medicine that all financial obligations to the University be met before the student is allowed to complete any registration documents or to attend classes, laboratories, or clinics.

**Cross-Registration.** Students in the School of Dental Medicine may enroll in courses offered at other Harvard schools or at the Massachusetts Institute of Technology. Written consent of the instructor offering the course must be obtained on cross-registration forms which must be signed by the Registrars at both the host school and the School of Dental Medicine. Cross-registration forms may be obtained in the HSDM Office of Student Affairs.

## INTERNATIONAL STUDENTS

Policies of the United States Immigration and Naturalization Service have led to new requirements for admission of foreign nationals holding F or J visas. In view of this, Harvard University now requires formal proof of financial resources sufficient to cover costs of tuition and expenses for the entire length of the program of study. Non-U.S. citizens who do not hold Permanent Resident visas at the time of acceptance cannot be admitted without written certification of ability to meet program costs. In addition, the School of Dental Medicine requires that all non-U.S. citizens who are not Permanent Residents pay full tuition for the first year in advance of registration.

## IMMUNIZATIONS

The Massachusetts College Immunization Law (Chapter 76, Section 15C) requires that all health sciences students who have patient contact must present evidence of immunity against measles, mumps, rubella, diphtheria and tetanus *as a condition of registration*. Because of its transmissibility and virulence, immunization for Hepatitis B is highly recommended. Hepatitis B immunization is available to registered dental students without charge from University Health Services. National and local conditions should be monitored to determine the need for influenza immunizations.





# CURRICULUM

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## PREDOCTORAL PROGRAM OUTLINE

The predoctoral curriculum is divided into four major areas which run consecutively:

<b>Basic Science/Preclinical Core</b>	<b>20 months</b>
<b>Major Clinical Dentistry Period</b>	<b>13 months</b>
<b>Externship/Elective Period</b>	<b>11 months</b>
<b>Biomedical Research/Health Care Research Tracks</b>	<b>11 months</b>

### Basic Science/Preclinical Core

In simplest terms, the philosophy of dental education at Harvard is that dentistry is a specialty of medicine. As a medical specialist, the dentist is part of the health care team; knowledge of the anatomy and physiology of the mouth alone will not suffice for the dental practitioner who hopes to comprehend the biological basis for the etiology and treatment of oral and systemic disease. In keeping with this belief, the curriculum allows medical and dental students to study the preclinical basic sciences together. The Harvard Medical School's core curriculum in the preclinical sciences (the "New Pathway") is a rigorous, well-balanced introduction to medicine which provides the student with a firm background in the fundamentals of the following areas:

#### The Human Body

Metabolism and Function of Human Organ  
Systems

Genetics, Reproduction and Development

Identity, Microbes and Defense

Pharmacology

Neurosciences

Pathophysiology

Patient-Doctor/Introduction to Clinical Medicine

Successful completion of this two-year long component of the curriculum ensures the future dental clinician a firm biological basis for understanding complicated medical conditions which patients may present. Course descriptions of core curriculum courses begin on page #.

The "New Pathway" is a problem-oriented, case discussion method of study. For the first two years, each medical and dental student is assigned to one of four teaching societies at the Harvard Medical School. The societies, each with a Master and several faculty advisors and tutors, are then further divided into small group tutorials. In this approach, cases based on actual clinical records or investigative problems are utilized and include learning objectives in the biosciences, behavioral sciences, social medicine, health promotion/disease prevention, critical analysis and clinical issues. Case discussion and independent study is supplemented by lectures, laboratory exercises and student-initiated contact with expert faculty resource persons.

An important part of the core curriculum is Patient/Doctor which is taught throughout Year I. Designed around a series of clinical experiences, the student learns first-hand from patients about the impact of illness on their lives and what they expect from their physicians and dentists. Clinical sessions and tutorials are supplemented with readings from the social and behavioral sciences, the clinical literature, and the medical humanities.

Patient/Doctor is followed in Year II by Introduction to Clinical Medicine (ICM), an externship which is taken with medical students at one of the Harvard affiliated teaching hospitals (hospital descriptions begin on page # ). The ICM externship introduces the student to the art of interacting with patients and establishing the close relationships necessary to achieve effective diagnosis and treatment. It also provides instruction in the basic techniques of interviewing and examining patients as well as the methodology of problem solving: how and when to use particular skills and how to adapt techniques of problem solving to specific clinical problems.

In order to introduce the dental student to concepts in oral health, six additional courses are part of the curriculum of the first two years:

#### **Oral Biology**

An introduction to the biological principles of dental and oral sciences.

#### **Gerontology**

Designed to encourage an understanding of changes and conditions which occur with aging.

#### **Oral Radiology**

An introduction to radiological technique and interpretation.

#### **Oral Pathology**

Presents the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands.

#### **Dental Anatomy**

The study of the structure of the teeth and their correlated parts.

#### **Occlusion**

The study of the contact relationship of teeth resulting from neuromuscular control of the masticatory system.

### **Major Clinical Dentistry Period**

During the months of June and July after the fourth semester, and continuing through semesters five and six (Year III), students are involved full-time in clinical training at the Dental School. Material is presented in the form of lectures, seminars, demonstrations, and individual chairside instruction. The basics of diagnosis, prevention, and therapy of oral disease are covered in detail in both department-specific and interdisciplinary formats. The low faculty/student ratio at HSDM encourages high standards of preparation and more than average supervised clinical time. For detailed descriptions of courses taught in Year III, refer to pages 20 through 35.

The Externship/Elective Period follows the Major Clinical Dentistry Period and runs from August following Year III into June of Year IV:

#### **Externship Period**

After the student has mastered the basic didactic material and clinical skills required in general dentistry, the externship experience provides the

opportunity to enhance clinical skills and judgement outside the dental school environment and to learn how dental health care is integrated with total health care delivery. During the Externship Period, the student participates in patient care activities at the sites listed below:

**General Dentistry - affiliated Veterans Administration Hospitals**      **12 weeks**

**Pediatric Dentistry - Children's Hospital Medical Center**      **4 weeks**

**Oral Surgery - Massachusetts General Hospital**      **4 weeks**

**Advanced Restorative Dentistry**      **4 weeks**  
**Harvard School of Dental Medicine**

Ample opportunity thus exists during Year IV for students to reinforce their skills in general dentistry. Students also return to the School of Dental Medicine one day per week for courses in Practice Management and Advanced Occlusion, a Case Presentation Seminar series, and for a Comprehensive Care Clinic where they are able to continue to treat and follow patients.

#### **Elective Period**

During the fourth year, approximately two to three months are available for elective courses or programs for students who have completed all clinical and didactic requirements. The program selection is made in conjunction with a faculty advisor and the Office of Student Affairs, with appropriate input from the Curriculum Committee's Subcommittee on Electives. Examples of recent fourth year electives are:

**Anesthesia**  
**Dental Care Administration**  
**Dermatology**  
**Exchange Programs (foreign or U.S.-based)**  
**General Dentistry (at several sites)**  
**Implantology**  
**Intravenous Sedation**  
**Oral Medicine**  
**Oral Pathology**  
**Oral Surgery**  
**Otolaryngology**  
**Pediatric Dentistry**  
**Pediatric Oral Surgery**  
**Research**



## THE FIFTH YEAR

The fifth year of the predoctoral curriculum permits students to follow their interests in either biomedical sciences or health care issues. Both tracks provide an intensive research experience and advanced coursework related to the area of research, and both culminate in the writing and defense of a thesis. Further detail about research requirements and procedures can be found on the following page and on page 33.

### Health Care Research Track

The Health Care Research Track of the five-year curriculum is designed to prepare dentists who, in addition to being well trained clinicians with a broad biomedical knowledge base, can eventually assume leadership roles in preventive dentistry, health care administration, and public policy. Training in the Health Care Research Track is done in consultation with the Department of Dental Care Administration, and consists of appropriate courses which may be selected from the Harvard School of Public Health (HSPH), the Kennedy School of Government, and the School of Dental Medicine or other collaborating institutions. An acceptable research thesis related to health care issues is required.

It is possible for students who are accepted for admission to earn a Master of Public Health or Master of Science degree from HSPH during the fifth year and receive both the D.M.D. and M.P.H. or M.S. degrees at the end of Year Five. The fifth year can also be used to begin a Master of Public Policy program at the Kennedy School of Government if the student is accepted for admission. Additional time beyond the fifth year is generally required for completion of the M.P.P. degree.

For students interested in international oral health problems, arrangements may be made to spend 3-5 months of the fifth year in a developing country performing research and/or patient care services. Several agencies, including the Peace Corps and Project Hope offer possible support for travel and living expenses. Opportunities also exist for research and patient care on Indian reservations under the auspices of the Indian Health Service or at the National Institute of Dental Research under the COSTEP program.

### Biomedical Research Track

The Biomedical Research Track of the predoctoral five-year curriculum is designed to prepare dentists who, in addition to being well trained clinicians with a broad biomedical knowledge base, can ultimately design, conduct, evaluate and make original contributions to biomedical research. Research training is done under the direction of a research sponsor, and includes appropriate courses from faculties throughout the University.

Students who wish to broaden their experience in clinical medicine may also choose to spend 3-5 months of the fifth year in appropriate medical clerkships, e.g., medicine, ambulatory care, anesthesiology, otolaryngology, dermatology, etc.

### Postdoctoral Programs

The fifth year in either track may be credited toward Harvard postdoctoral programs that require a year of biomedical research or health care research. These programs include Orthodontics, Oral Pathology, Periodontology, Prosthetic Dentistry, Implant Dentistry, Dental Public Health, Epidemiology, or General Dentistry. They may be combined with studies leading to a degree in Public Health, Health Policy and Management, Public Policy, or Biomedical Research. In some cases, clinical specialty training may be followed by a program leading to the M.D. degree and an appropriate medical internship. All advanced degree programs at HSDM and other schools of the University require admission by the respective committees on admission.

In addition to specialty programs offered at the School of Dental Medicine, postdoctoral programs in the form of hospital-based residencies are available through Harvard's affiliated teaching hospitals. These include: Oral and Maxillofacial Surgery (Massachusetts General Hospital); Pediatric Dentistry (Children's Hospital Medical Center); Periodontology (West Roxbury VA Hospital); Prosthetic Dentistry (VA Boston Outpatient Clinic); General Dentistry (Brigham and Women's Hospital and West Roxbury/Brockton VA Hospitals).



## RESEARCH

The Harvard School of Dental Medicine considers the generation of new knowledge to be an integral part of the training of future leaders in Dentistry. In recognition of this goal, predoctoral students are required to explore and develop interest in a relevant special field or fields of research resulting in the completion of two separate research projects within the five year curriculum.

During the first year at HSDM, the student is aided in selecting a research sponsor in an appropriate area of biomedical research or in health care delivery research. Over the next year and one-half, the student participates in research experiences which culminate in the development and presentation of a research proposal in the third year and a paper and defense at the end of the fourth year.

The early experience in research during the first four years is deemed essential to familiarize students with research principles which will maximize the later research experience. It is anticipated that students who have made significant progress in their research during the first four years of the five year program should be in a more favorable position to apply to public and private agencies for available fellowships to partially support their fifth year and/or several more years of training in a combined postdoctoral program.

The research requirement of the fifth year, either health care or biomedical, is in addition to the fourth-year requirement and may consist of a more extensive development of the same subject of the earlier research, or a completely new topic of interest. A thesis is presented both in written and oral form and defended before a thesis committee. Research Honors awarded to graduates of the five-year curriculum are based upon evaluation of all research accomplished in the five-year program.

### Chronology of Research Activities

#### YEAR I

Sept - June	Explore research opportunities
July - Aug	1-2 months available for research

#### YEAR II

Sept - Aug	Continue exploring research opportunities Develop and/or submit written 4th Year research proposal (with faculty sponsor's approval)
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#### YEAR III

Dec - Jan	Develop and submit written 4th Year Research proposal (with faculty sponsor's approval)
Feb	Defend research proposal before faculty committee (15 minutes)

#### YEAR IV

Sept - Mar	1-2 months elective research time available
Mar - Apr	Submit draft of research paper to faculty sponsor
Apr	Submit approved and completed research paper for faculty review
May	Oral Presentation (15 minutes) at HSDM 4th Year Research Day

#### YEAR V

June - Aug	Develop and submit written 5th Year proposal after consultation with faculty sponsor
July - Oct	Assemble 3-member faculty advisory committee and defend proposal before this group (1 hour)
July - Mar	Scheduled time for research and coursework (varies with program)
March	Submit thesis draft to faculty sponsor for approval; provide faculty advisory committee with corrected version
April	Present detailed research results to faculty advisory committee (1 hour); discuss manuscript publication
April	Oral presentation (20 minutes) at HSDM 5th Year Research Day

# BOARD EXAMINATIONS AND LICENSURE

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## NATIONAL BOARD DENTAL EXAMINATIONS

The results from the National Board Dental Examinations are used by state boards to determine if dentists who are applying for licensure are qualified to practice dentistry. These boards are given in two parts, both of which must be passed before graduating from HSDM. Part I is taken at the end of Year II and is made up of four examinations which test knowledge of the basic biomedical sciences:

- Anatomic Sciences
- Biochemistry-Physiology
- Microbiology-Pathology
- Dental Anatomy

Part II is taken in December of Year IV. Its seven examinations cover clinical subjects:

- Operative Dentistry
- Pharmacology
- Prosthodontics
- Oral Surgery-Pain Control
- Orthodontics-Pediatric Dentistry
- Endodontics-Periodontics
- Oral Pathology and Dental Radiology

## NORTH EAST REGIONAL BOARD DENTAL EXAMINATIONS/LICENSURE

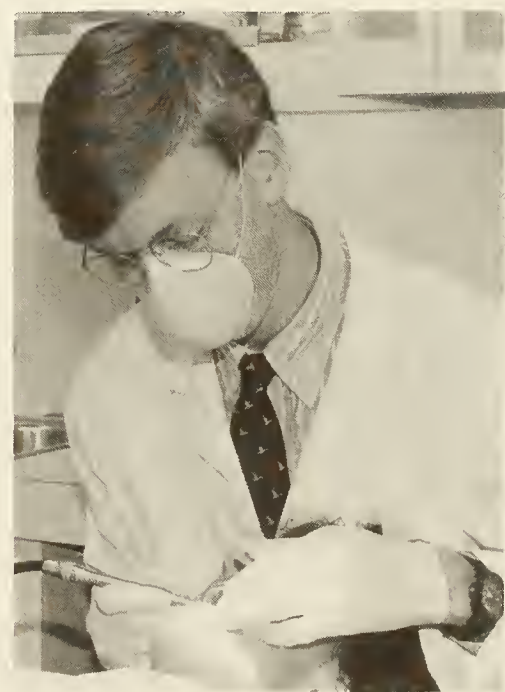
The North East Regional Board Dental (NERB) Examinations may be taken at the end of Year IV by HSDM students who have met the academic and clinical requirements established by the School. These exams are comprised of one-half day of written and two full days of clinical testing. The NERB is required for licensure in the Commonwealth of Massachusetts as well as in 14 other states in the north and northeast.

To assist students in preparation for the NERB Examinations, the School administers a Mock NERB examination which parallels the format of the actual examination. Although passing of the NERB Examinations is not a requirement for the D.M.D. degree, all students are required to take and pass the Mock NERB examination administered by the School.

Students who have passed the NERB and who have subsequently obtained a Massachusetts license are then eligible to participate in the Advanced Student Licensed Practitioner Clinic (ASLPC) in Year V. This clinic was established at HSDM to provide a convenient setting outside of the usual school hours in which selected, licensed fifth year students and other approved advanced students can provide dental care in a licensed student group practice setting. It provides an opportunity for students to maintain and enhance their clinical proficiency through practice in an environment which offers faculty supervisor consultation and assessment similar to a general practice residency. Students can earn income from this dental practice at times that do not conflict with their academic programs.

## SUBJECT EXAMINATIONS OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

In addition to the Dental Boards, HSDM students are encouraged to take the Subject Examinations of the National Board of Medical Examiners. It is recommended that these examinations be taken prior to the start of the third year and are required for entrance into the Harvard Medical School for the M.D. component of a combined M.D. - dental specialty program.





# HONORS AND AWARDS

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The School of Dental Medicine confers the following honors and awards to its most distinguished students each year at graduation:

## **Harvard Dental Alumni Association Gold Medal Award**

Given for all-round scholastic excellence in the course of study over five years.

## **Harvard Dental Alumni Association Silver Medal Award**

Given for all-round scholastic excellence in the course of study over five years.

## **Dr. Norman B. Nesbett Medal**

Given by the Harvard Dental Alumni Association to the graduating student who has shown excellence in the field of clinical dentistry.

## **Dr. Grace Milliken Award**

Given annually to the student who has submitted the outstanding essay (thesis) on the general subject of dental health.

## **Dr. Paul E. Boyle Award**

Given for high scholastic achievement in Oral Pathology.

## **Dr. Roy O. Greep Award**

Given for high scholastic achievement in coursework in the Basic Sciences.

## **Harvard Odontological Society Award**

Given annually by the Harvard Odontological Society to the best seminar essayist in the graduating class.

## **Omicron Kappa Upsilon**

Up to three students in the graduating class are nominated for membership.



*Commencement 1989:  
Armbands worn by  
graduates signify support for  
students in mainland China*



# DEPARTMENTS OF INSTRUCTION AND COURSE DESCRIPTIONS

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## BASIC SCIENCE CORE\*

### The Human Body\*

**Course Director:** Dr. Goodenough. **Additional faculty:** Drs. Dacheux, Mellins, Olsen, Raviola. **Offered** September-October of Year I. **Format:** lecture, laboratory, tutorial. **Evaluation:** two examinations, classroom performance.

The Human Body is an eight-week intensive introduction to the basic sciences, centered on the structure of biological systems from molecules to organisms. It is taught using problem-solving, case-based methods in small tutorial sessions and laboratories. Medical cases guide and define learning agendas which are set in the individual tutorials. Occasional lectures will focus on general principles and will not offer systematic coverage of the course material. The laboratories offer experience in solving structural problems in cell biology and histology, gross anatomy and radiology. The central focus of the course is to integrate structural principles across all levels of magnification, and to build a fundamental knowledge of structure/correlation and general systems rules. Six to eight hours of study outside class time are expected each day. Students are expected to develop their own learning agendas in the tutorial groups and in individual study.

### Metabolism and Function of Human Organ Systems\*

**Course Directors:** Drs. Hess, Karnovsky, Zetter. **Additional members of the faculty and associates.** **Offered** November-January of Year I. **Format:** lecture, conferences, tutorial. **Evaluation:** two written examinations and tutorial performance.

This is a dual program consisting of parallel courses in Biochemistry and Physiology, which will be related wherever possible. It may be described as an introduction to the interrelationships of

function and structure, from the molecular to the organismic level of organization. Selected topics in biochemistry, biophysics, physiology, and molecular biology are presented in a format that includes a variety of learning methods, e.g., problem solving. Emphasis is on the regulation of metabolism; the organization and regulation of muscular, cardiovascular, gastrointestinal, respiratory, and renal function; the transport of solute and water, and on homeostasis and feedback regulation. Clinical aspects of the cases studied in tutorials are integrated with the basic science objectives of the course.

### Genetics, Reproduction and Development\*

**Administrative Course Director:** Dr. Leder. **Co-directors:** Drs. Federman and Hay. **Additional faculty:** Drs. Erbe and Williams. **Offered** February-March of Year I. **Format:** lecture, tutorial, clinics, conferences. **Evaluation:** written examination and classroom performance.

This course will focus on fundamental aspects of human genetics, reproduction, early development and morphogenesis. Both classical and molecular genetics will be addressed, with particular application to human biology and medicine. Laws that govern inheritance and variation among individuals and populations will be considered, with special attention to the molecular aspects of inheritance, mutation and gene control. Newer molecular, cellular and cytogenic approaches will be emphasized, with reference, whenever possible, to human gene systems and inherited disease. The course will discuss the endocrine events of puberty, the hormonal basis of human sexuality, and the control of gametogenesis. Early human development and the morphogenesis of selected organ systems are presented in lectures; other organ systems are developed in tutorials, conferences and videotapes or movies. There will be emphasis on helping the student visualize the developing



organism in three dimensions. Major concepts of experimental embryology are introduced to assist the student in learning to think about developmental mechanisms.

### **Identity, Microbes and Defense\***

**Course Director:** Dr. Colvin. **Additional faculty:** Drs. Fields, Rosen, Szabo, members of the faculty and associates. **Offered** April-June of Year I. **Format:** lecture, conferences, laboratories, tutorials. **Evaluation:** written examinations and classroom performance.

Students will be expected to learn the basic principles of immunology and general pathology, as well as gain an understanding of the principles of microbial structure, metabolism, pathogenicity, and replication. The course emphasizes concepts basic to understanding the immune system of the body. Basic concepts of pathology will be explored, including injury, inflammation, hemostasis, atherosclerosis, and neoplasia. The structure and function of microbes will be learned by examining classes of typical organisms as they cause their related disease; microbial genetics, reproduction, and metabolism will be studied as well as basic microbiologic techniques. Tutorials and laboratories will emphasize problem solving skills, integration of knowledge, and independent learning.

### **Principles of Pharmacology\***

**Course Director:** Dr. Golan. **Members of the faculty and associates.** **Offered** February of Year I. **Format:** lecture, conference, tutorial. **Evaluation:** written examination and participation in conferences and tutorials.

This course provides an introduction to pharmacology, emphasizing basic mechanisms of drug action and principles of drug-receptor interactions, pharmacokinetics, and drug metabolism. Drug classes are illustrated using prototypic drugs, focusing on mechanisms of drug action rather than on small differences between similar agents. Examples are drawn from autonomic nervous system, cardiovascular, and central nervous system pharmacology; autacoids and chemotherapeutic agents are also considered. Principles are developed that should allow students to evaluate both drugs currently used in the clinic and those under development in pharmaceutical

houses. Relationships between basic mechanisms and clinical uses of therapeutic agents are explored in small-group conferences and care-based tutorials.

### **Human Nervous System and Behavior\***

**Course Director:** Dr. Furshpan. **Additional faculty:** Drs. Glick, Palay, Potter, Richardson, Sudarsky, Walshe, members of the faculty and associates. **Offered** September-November of Year II. **Format:** lecture, laboratory, tutorial. **Evaluation:** classroom performance and two examinations.

This course provides an introduction to the nervous system and human behavior. One of the aims of the course is to enhance, where possible, integration of the various ways in which the functions and malfunctions of the nervous system are studied: anatomy, physiology, pharmacology, pathology, psychology, neurology, psychiatry. One clinical case per week will introduce a wide range of issues and provide the context for their study. Among the topics are the following: the general organization of the brain and spinal cord, and the localization of function; nerve impulse conduction; synaptic transmission; depression; addiction; personality structure; panic and anxiety; control of movement; sensory systems; psychosis; neuronal death and degeneration; cognitive function; control of excitability in neuronal circuits. Independent study of topics identified as central learning issues in the clinical cases, after discussion in tutorial, will be a major activity. The lectures will help students organize complex bodies of material, will provide up-to-date information not readily available in textbooks, and will help consolidate material already studied. The laboratories will provide access to fixed tissues, to radiological and scanning techniques, and to methods of electrical stimulation and recording; pathological specimens will be studied in the context of minicases.



## **PATHOPHYSIOLOGY\***

Pathophysiology is taught as a series of 10 short courses starting in November of Year II. The individual course descriptions are detailed below.

### **Cardiovascular Pathophysiology\***

**Course Director:** Drs. Marsh and Benson.  
**Additional members of the faculty and associates.** Offered November-December of Year II. **Format:** lectures, conferences, laboratories. **Evaluation:** written examination.

To prepare students to start clinical cardiology, the course will present the pathophysiology, pathology and pathologic radiology of the circulatory system. Pathophysiologic teachings will build upon principles of circulatory physiology already studied. Lectures, laboratories and outside reading will allow students to gain an understanding of diseases of the circulatory system in both adult and pediatric populations.

### **Gastrointestinal Pathophysiology\***

**Course Director:** Drs. Bynum and Chopra.  
**Additional members of the faculty and associates.** Offered March of Year II. **Format:** lecture, conferences, laboratory. **Evaluation:** written examination.

The course presents a systematic survey of human diseases of the esophagus, stomach, small and large intestines, pancreas, biliary tract and liver. It is designed to provide students with basic knowledge of diseases of the human digestive system in preparation for clinical or other advanced study. Emphasis will be on etiology, pathogenesis, structural and functional alteration and methods of clinical diagnosis of the various diseases.

### **Hematology\***

**Course Director:** Drs. Bunn and Kaye.  
**Additional faculty:** Dr. Hawiger, members of the faculty and associates. Offered January-March of Year II. **Format:** lectures, conferences, laboratories. **Evaluation:** written examination.

The course is an intensive survey of the biology, physiology and pathophysiology of the blood and the blood-forming organs, with consideration of hematopoiesis, the formed elements of the blood,

blood coagulation, blood groups, and immunoglobulins. The course is designed to foster a working knowledge of hematology and provide a basic approach to the key clinical problems in this field. It consists of didactic and informal discussions, analysis of clinical problems and review of the status of current research in hematology. Attention is also given to peripheral blood and bone marrow morphology and to basic clinical laboratory techniques.

### **Renal Pathophysiology\***

**Course Director:** Drs. Rose and Coggins.  
**Additional faculty:** Dr. Silva, members of the faculty and associates. Offered January-March of Year II. **Format:** lecture, laboratory. **Evaluation:** written examination.

The course is designed to develop students' understanding of the pathogenesis, morphology and functional consequences of major diseases that affect the kidney, as well as the origins and consequences of disordered regulation of major ionic constituents of body fluids. The course will consider the mechanisms and morphology of diseases which primarily affect the glomeruli and renal tubules, vasculature and interstitium. Acid-base disorders, abnormal regulation of sodium, potassium and water, and the consequences of failure of renal excretory function will be covered and, where possible, related to morphologic abnormalities within the kidney.





## **Pathophysiology of Reproductive Medicine\***

**Course Director:** Dr. Ravnika. **Additional members of the faculty and associates.** Offered January of Year II. **Format:** lecture, case discussions, pathology demonstrations. **Evaluation:** written examination.

The course presents an overview of the male and female physiology, pathophysiology and endocrinology which are the basis for clinical reproductive medicine. Instruction is based on a syllabus supplemented by lectures and case-discussion sections. Selected topics include menopause, contraception, normal and abnormal pregnancy states, common disorders in male reproductive functioning.

## **Respiratory Pathophysiology\***

**Course Director:** Drs. Reid and Fanta. **Additional members of the faculty and associates.** Offered November-December of Year II. **Format:** lecture, conferences, laboratory. **Evaluation:** written examination.

The course provides students with an understanding of respiratory disease based on underlying changes in structure and function and related to pathogenesis. A systematic survey of these alterations and the ways in which they become manifest at the clinical level will be presented. While the respiratory function of lung is the main aspect covered, non-respiratory or metabolic function is also considered. Extensive use will be made of patient-oriented exercises, some of which will take place in a hospital setting.

## **Pathophysiology of Infectious Disease\***

**Course Director:** Dr. Weinberg. **Additional faculty:** Drs. Hopkins, Sharpe, members of the faculty and associates. Offered March-April of Year II. **Format:** lecture, laboratory, clinic. **Evaluation:** written and laboratory examinations.

This course will build on the microbes, identity and defense common course given for first year students in the second semester. Medically important microbial agents will be stressed, working to understand pathogenic mechanisms of infectious disease and to explore pathophysiologic processes in various organ systems. The lectures will focus on general concepts and many will be included as handouts only, with brief reading supplements. The

laboratory-conferences will be oriented around a series of short cases with specific organ system focus, and exemplifying the usual infections caused by a selection of viral, bacterial, parasitic and fungal pathogens. Ecologic, epidemiologic, pathologic and immunologic issues will be considered. Approximately two-thirds of the classroom experience will consist of clinical-pathologic-bacteriologic (CPB) conferences, laboratory demonstrations and small group projects and discussions, led by clinical and laboratory oriented instructors.

## **Pathophysiology of the Skin\***

**Course Director:** Dr. Rhodes. **Additional faculty:** Drs. Arndt, Baden, Fitzpatrick, Gonzalez, Haynes, Margolis, Mihm, Olbricht, Parrish, Pathak, Sober. Offered May of Year II. **Format:** lecture, seminars. **Evaluation:** written examination.

The course will review the structure and function of the skin and introduce students to gross and microscopic pathology. The pathophysiology of skin will include disorders of keratinization, blister formation, abnormalities of pigmentation, immunologic diseases, alterations in the dermis and panniculus, photobiology and photomedicine, and cutaneous malignancies. There will be seven didactic sessions for which the students will be divided into small groups each led by two faculty members. Clinical and histopathological slides will be used to illustrate the important aspects of the pathophysiology of selected diseases. Appropriate visual materials will be used to introduce students to examination of the skin and recognition of the more common cutaneous lesions. The course will prepare students for the clinical electives offered by the department or provide a basic background for those not planning such a curriculum.

## **Musculoskeletal System\***

**Course directors:** Drs. Nussbaum and Robb-Nicholson. Offered April-May of Year II. **Format:** lectures and conferences. **Evaluation:** written examination.

The course is organized to give students an adequate background in the skeletal system, rheumatology, and calcium metabolism, which will enable them to start their clinical program in medicine, orthopaedics and pediatrics. The course will present the pathophysiology of the skeletal and muscular systems and of hormonal control.



## **Pathophysiology of the Endocrine System\***

**Course Director:** Dr. Arky. Additional members of the faculty and associates. Offered January of Year II. **Format:** lectures, conferences, laboratories. **Evaluation:** written examination.

The course will involve a thorough review of the physiological fundamentals of endocrinology and metabolism, followed by lectures, clinics and section work concerned with the clinical approach to problems in these areas. Mechanisms of hormone action and pathophysiological mechanisms involved in disorders of the pituitary, thyroid, adrenal glands and pancreas will be given major emphasis. These subjects will be integrated with materials presented in other pathophysiology blocks, specifically with reproduction. The aim of the course will be to provide a firm basis for the approach to clinical problems of endocrinology and metabolism. Subjects covered in earlier courses will be reviewed, as will methods of testing functions of endocrine organs. Major pathological disorders will be discussed from the standpoints of the clinician, pathologist and pharmacologist.

## **INTERDEPARTMENTAL\***

### **Patient/Doctor\***

**Course Director:** Dr. Donoff. Additional faculty: Drs. August, Needleman, Wilkes, Harvard Medical School staff. Offered September-June of Year I. **Format:** tutorial, groups of six students; clinical cases, clinical experiences, readings and group discussions. **Evaluation:** oral presentation of home visit, summary evaluation of each student by tutorial leader, written analysis of unknown case, completion of interview exercise.

The course is designed around a series of clinical experiences in which the student learns first-hand from patients about the impact of illness on their lives and what they expect from their physicians and dentists. Working closely with a faculty preceptor and a small group, students learn the fundamentals of patient interviewing. Clinical sessions alternate with case based tutorials which highlight critical clinical issues, conflicts of perspective between patients' and doctors' values, and the impact of broader social factors on the care of patients. Readings from the social and behavioral sciences, the clinical literature and the medical humanities serve to broaden student understanding of the

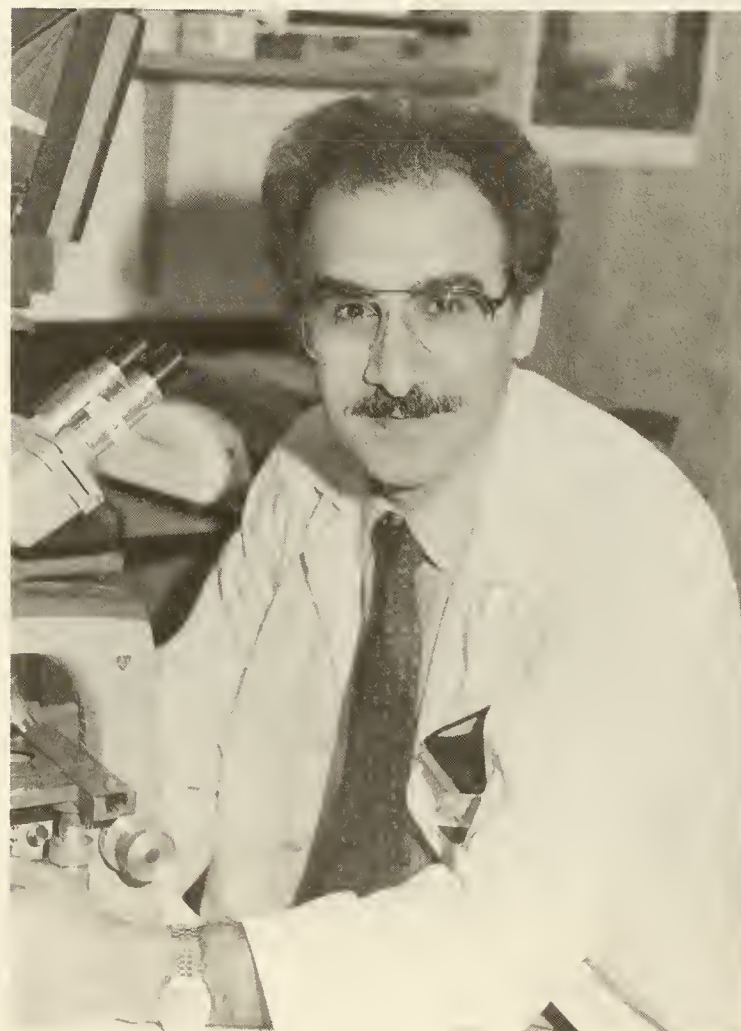
attitudes, beliefs and expectations which patients and doctors alike bring to the clinical encounter.

## **Introduction to Clinical Medicine (ICM)\***

**Course Director:** Dr. Mills. Additional faculty and associates. Offered Year II. **Format:** Externship. **Evaluation:** a monitored history-taking and physical examination experience.

The Introduction to Clinical Medicine (ICM), the externship continuation of the Patient/Doctor course, is taken with medical students at one of the Harvard affiliated teaching hospitals. This course/externship introduces the student to the art of interacting with patients and establishing the close relationships necessary to achieve effective diagnosis and treatment. It also provides instruction in the basic techniques of interviewing and examining patients as well as the methodology of problem solving; how and when to use particular skills and how to adapt techniques of problem solving to specific clinical problems. Information about individual diseases is inevitably accumulated as the course proceeds. It is not the intent of the course, however, to survey clinical medicine or various diseases in a systemic manner.

\*Reprinted from the Harvard Medical School Catalog, 1988-1989.





## DENTAL CARE ADMINISTRATION

Chester W. Douglass, D.M.D., Ph.D.  
Professor of Dental Care Administration  
Department Head

### DEPARTMENT DESCRIPTION

The Department of Dental Care Administration conducts programs at both the pre- and postdoctoral level. Courses offered include the content areas of dental epidemiology, community dentistry, behavioral sciences, biostatistics and research methods, health policy and administration, geriatric dentistry, and professional ethics. The department supervises extramural rotations for fourth year students and is also responsible for the Health Care Research tracks at the pre- and postdoctoral levels. The Department's teaching program includes seminars in health care research methods which enable fifth year dental students to develop protocols of a research project that will meet their predoctoral thesis requirements.

Members of the Department are involved in the New England Consortium of Oral Epidemiology which is conducting cross sectional and longitudinal studies of distribution and high risk factors associated with oral disease in various subpopulations in the New England region. Other studies being conducted by this department include a national sample survey of dental practices investigating economies of scale in solo and group practice. A research program of technology assessment and the diffusion of preventive dentistry methods currently includes studies of periodontal treatment, dental radiographs and various oral and surgery procedures. Also being conducted are studies of preventive dentistry decision analysis. The department is currently increasing its commitment and activity in the field of international dental care programs.

The postdoctoral programs of the Department of Dental Care Administration include fellowship training programs in Health Services Research, Oral Epidemiology, and Geriatric Dentistry. Each of these fellowship programs can lead to specialty certification in Dental Public Health when combined with the postdoctoral residency in Dental Public Health leading to board eligibility which is offered with courses taken in this department and at the Harvard School of Public Health.

## COURSES

### Gerontology

Course Directors: Drs. Jones and Fedele.  
Additional faculty: Dr. Gordon, Geriatric Education Center faculty, postdoctoral fellows in Geriatric Dentistry and Epidemiology.  
Offered May of Year I. Format: lecture and discussion. Evaluation: final examination.

This course is required for first year dental students and is designed to encourage an understanding of changes and conditions which tend to occur with aging. The course addresses physiologic, psychologic, social and ethical issues, all of which warrant consideration in relating to and caring for the older patient. Specific topics covered include demographic changes, utilization of dental services, financing dental services, epidemiology of oral diseases, the biology of aging, oral biology of aging, rehabilitation of elders, nutritional considerations in elders, psychosocial perspectives, ethical considerations, the use and effects of medications by elders and elder abuse. Although some clinical material is presented in this course, it is intended to be broad in nature and to complement the more clinically oriented course offered in the third year.

### Ethics, Law, and Professionalism

Course Director: Dr. Douglass. Additional faculty: Drs. Guralnick, Kazis, Rosenberg.  
Offered spring of Year III. Format: lecture and discussion. Evaluation: class participation, final written examination.

Ethics, Professionalism and the Law focuses on the professional responsibility of the dentist. The course starts with a study of the principles of medical ethics and how they relate to dentistry. Class sessions include discussions led by members of the State Board of Registration for Dentistry and the Massachusetts Dental Society Committee on Ethics. Issues include an understanding of the following ethical principles: nonmaleficence, autonomy, justice, veracity and confidentiality. Ethical reasoning is studied. The final examination consists of an analysis of a case study of actual dental-office-practice ethical situations.



## Dental Care Administration

**Course Director:** Dr. Bernick. **Additional faculty:** Dr. White. **Offered** spring of Year III. **Format:** lecture. **Evaluation:** take home examination.

The Dental Care Administration course is divided into four modules: 1) Dental Care Delivery Systems which deals with solo practice, group practice, health maintenance organizations, preferred provider organizations, hospital based dental programs, and public health setting dental programs; 2) Financing and Reimbursement, covering dental insurance, capitation, Medicare and Medicaid; 3) Government Dental Programs (local, state, federal and international); and 4) DCA Research options.

## Geriatric Dentistry

**Course Director:** Dr. Gordon. **Additional faculty:** Offered spring of Year III. **Format:** lecture. **Evaluation:** final examination.

This eight-hour lecture course reviews basic principles of Gerontology and covers the effect of aging on the provision of dental care. Topics include: 1) utilization of dental services by the elderly; 2) epidemiology of dental disease in the elderly population; 3) the effects of normal aging on the oral cavity; 4) long term care and homebound populations; 5) portable dental equipment; 6) pharmacology and the elderly; 7) the impact of physical and sensory deficits; 8) preventive care and treatment of the demented patient; 9) ethics; 10) specific clinical areas (periodontal therapy, restorative dentistry, endodontics, prosthodontics); and 11) treatment planning considerations for special patients.

## Biostatistics

**Course Director:** Dr. Berkey. **Additional faculty:** Dr. Douglass. **Offered** spring of Year III. **Format:** seminar. **Evaluation:** graded homework papers, presentation, final examination.

This course is an introduction to biostatistics and research methods for postdoctoral dentists which uses a self-instructional text to present many of the fundamental concepts in data analysis. Class time is devoted primarily to discussion of published dental research papers and to the students' own ongoing research, emphasizing the statistical methods used and their appropriateness. This

format provides experience in critically evaluating the work of others as well as in improving the analytical methods applied in individual research.

## Dental Care Administration Externship

**Course Director:** Dr. Antczak. **Additional faculty:** preceptors as needed. **Offered** year IV. **Format:** project. **Evaluation:** final paper.

In this elective, the student, in conjunction with the course director, designs a project and chooses a preceptor. The topic can be anything related to the Administration of Dental Care and the student is required to submit a written report. The report should include a description of the project, background information on the area of administration, and an evaluation of the student's experience.



## ENDODONTICS

Alvin A. Krakow, D.D.S.  
Department Head

### DEPARTMENT DESCRIPTION

The predoctoral program has as its objective the teaching of the theory, biological basis, and practice of endodontics. The course is designed to present the student with the knowledge and skills to examine, diagnose, and successfully treat pulpally involved or potentially pulpally involved teeth in order to maintain an intact dentition. An important aspect of the course is the integration of endodontic therapy within the total plan of patient care. Emphasis is on the preventive aspects of endodontics, as well as definitive treatment modalities. Teaching is through lectures, demonstrations, technique laboratories, and individual chair-side instruction.

### COURSES

#### Endodontics

**Course Director:** Dr. Dunsky. **Additional faculty:** Drs. Chernin, Goldstein, Krakow, Reuben, and Yu. **Offered** summer of Year II. **Format:** lecture, laboratory, demonstrations, treatment conferences, audiovisual presentations, guest lectures, supervised clinical practice. **Evaluation:** written examination, laboratory projects, clinical evaluation.

The purpose of the course is to guide the student in developing an understanding of and appreciation for the etiological factors of pulp and periapical disease. In addition, the student will be exposed to a variety of treatment modalities that may be appropriate for the problems they will face in clinical practice.

Skills are developed in the examination, diagnosis, and treatment of pulpally involved and potentially involved teeth. Emphasis is placed on the preventive aspects of endodontics as well as definitive therapy by non-surgical and surgical means. The integration of endodontics into the total plan of treatment for the patient is stressed throughout the course.

## IMPLANT DENTISTRY

Paul A. Schnitman, D.D.S., M.S.  
Associate Professor of Implant Dentistry  
Department Head

### DEPARTMENT DESCRIPTION

The Department of Implant Dentistry, located within the School of Dental Medicine, offers a three year advanced education postdoctoral program in implant dentistry, implant rotations for both predoctoral and postdoctoral students, and a continuing education program in implant dentistry, as well as maintaining an implant dentistry and special care for advanced dental disease clinic. The department's facilities include an outpatient surgical suite, three implant prosthodontic operatories, a diagnostic operatory with full radiologic capabilities, and a full service implant technical laboratory.

### PREDOCTORAL PROGRAM

For predoctoral students, the department offers courses introducing the student to the field of implant dentistry and the treatment of a noncomplex case. Included in these courses, students can participate in a two-month rotation through the department in the spring of their fourth year.

### COURSES

#### Implant Dentistry

**Course Director:** Dr. Schnitman. **Additional faculty:** Drs. Rubenstein and Crockett and clinical and research fellows. **Offered** spring, Year III. **Format:** lecture. **Evaluation:** exam.

New concepts and techniques have made implants an integral part of modern dentistry. This course provides an introduction to the field of implant dentistry and familiarizes students with historical perspectives, basic biology, and current concepts and techniques in the field.



## **Implant Dentistry in the Clinical Setting**

**Course Director:** Dr. Schnitman. **Additional faculty:** Drs. Rubenstein and Buhite and clinical and research fellows. **Offered spring, Year IV. Format:** clinical rotation. **Prerequisite:** Implant Dentistry. **Evaluation:** case presentation.

For the first month of this elective rotation, the student spends one week observing all aspects of implant treatment and one week assisting and participating in implant dentistry. At the end of the second week, the student is assigned a totally edentulous patient and, during the next two weeks, completes diagnosis, treatment planning and implant insertion.

Four months later, the student returns to perform second stage surgical abutment connection. During the final three weeks, s/he completes the restorative phase of treatment in addition to performing ongoing follow-up and maintenance procedures within the department.

## **OPERATIVE DENTISTRY**

I. Leon Dogon, L.D.S., R.C.S., D.M.D.  
Professor of Operative Dentistry  
Department Head

### **DEPARTMENT DESCRIPTION**

The Department of Operative Dentistry is responsible for teaching Dental Anatomy, Preclinical Operative Dentistry, Oral Hygiene, Clinical and Advanced Clinical Operative Dentistry, and Dental Materials to predoctoral students. Instruction is given by means of lectures, discussions, seminars, and individual chair-side instruction. Audio-visual aids, including closed circuit television, are used extensively. Throughout the course in Operative Dentistry, emphasis is placed on early student-patient contact with immediate clinical application of treatment procedures. The student develops proficiency in examination, diagnosis, and treatment planning, as well as in treatment procedures. Current concepts of cavity preparation and restorative techniques are taught using conventional and high-speed cutting instruments. Advanced operative procedures, including multiple surface cast gold and gold foil restoration are also taught. Instruction in Operative Dentistry is provided throughout the Major Clinical

Period and continues through the Externship Rotation.

The Department of Operative Dentistry at the Harvard School of Dental Medicine is extensively involved in research activity. The three full-time members based at the School spend a portion of their time participating in both clinical and laboratory research. Investigations on the biological response to new restorative materials and materials with potential for dental use are in progress. New formulations of tooth-colored materials for use in posterior segments of the oral cavity are also under investigation. These involve laboratory and animal studies, as well as human clinical evaluations.

The durability of experimental fluoride-releasing pit and fissure materials as well as commercially available polymers used as pit and fissure sealants are evaluated in paired permanent posterior teeth. These studies run parallel with chemical and electron microscopy studies to determine the nature and effectiveness of the bond between the dental enamel and material interface.

Adhesion and bonding to both enamel and dentin are being studied on human teeth by shear strength measurements, in addition to the study of bonding surface interfaces by light and scanning electron microscopy. The technique of thermocycling in isotopes to demonstrate the "sealing" ability of adhesives is also used.

New and experimental restorative materials are assessed for biological compatibility by their placement in dental and other oral tissues of primates and subsequent histological examination. Polymeric materials which have potential for use as posterior restorative material are screened in primates. The most promising candidates are modified and further evaluated in primates for biological compatibility and are also tested for physical properties related to wear and stability in the oral environment. Human evaluations are then initiated.

In addition, the Department Head is project director for a number of preventive dentistry projects in both Shanghai and Chengdu, China. In Shanghai, studies on the effectiveness of various preventive modalities delivered to children in 24 primary schools, (two in each district of the city), are underway. The programs are being accomplished in a joint effort involving Harvard School of Dental Medicine (HSDM), Shanghai Second Medical University and Project Hope. The

programs in the public primary schools in Chengdu are a collaborative effort between HSDM, West China University of Medical Sciences and Project Hope.

## **COURSES**

### **Dental Anatomy**

**Course Director:** Dr. Dogon. **Additional faculty:** Dr. Norris and Departmental Faculty. **Offered** fall semester of Year II. **Format:** lecture, laboratory. **Evaluation:** examination and laboratory work.

Dental Anatomy is the study of the structure of the teeth and their correlated parts. Students learn tooth function, identification, and relationships between form and function, and gain an understanding of species difference and difference in diet in tooth development. Abnormal tooth anatomy and anatomical structures are examined in extracted teeth, slides and live patients. Students learn to take into account the normal anatomy and variations necessary for planning restorations, utilizing motor skills derived from technical training, and applying them to more complicated procedures such as carving amalgams and carving wax patterns for inlays and crowns.

### **Operative Dentistry**

**Course Director:** Dr. Dogon. **Additional faculty:** Dr. Norris and Departmental Faculty. **Offered** throughout Year III. **Format:** lecture, clinic, demonstration. **Evaluation:** chairside evaluation and examinations.

Operative Dentistry is given throughout the Major Clinical Dentistry Period (Year III). In this course, emphasis is placed on early student/patient contact with immediate clinical application of treatment procedures. Instruction is given in the clinical aspects of caries and other dental diseases. By way of lectures, demonstrations, and individual instruction, the student develops proficiency in examination, diagnosis and treatment planning and treatment procedures; the current techniques of cavity preparation utilizing conventional and high speed instrumentation are given. In conjunction with these techniques, a study on the various types of dental materials used in restorative dentistry is given. Advanced Operative procedures including multiple surface gold inlay/onlay restorations are then taught along with some recently developed clinical procedures such as Acid Etch. In addition,

the students are instructed in communicative skills relative to student/patient interaction as well as student/staff interaction. Practice in all phases of Operative Dentistry continues throughout the Major Clinical Dentistry Period, Externship Rotation and during the Elective Period.

### **Advanced Operative Dentistry Externship**

**Course Director:** Dr. Norris. **Additional faculty:** Dr. Theriault, Dr. Levine, Dr. Vanaria, Dr. Trufant. **Offered** one month of Year IV. **Format:** clinic. **Evaluation:** clinical performance.

This course is given as a required one-month rotation during the externship period in the first semester of Year IV. Two students rotate at each time and are under the supervision of one instructor. The students are provided with a Dental Auxiliary trained in four-handed dentistry and undertake advanced restorative procedures including 3/4 and 7/8 cast gold crowns, porcelain fused to gold restorations, porcelain crowns and multiple inlays and onlays. Emphasis is placed on quality.





## **ORAL AND MAXILLOFACIAL SURGERY**

**R. Bruce Donoff, D.M.D., M.D.**  
Professor of Oral and Maxillofacial Surgery  
Department Head

### **DEPARTMENT DESCRIPTION**

Students begin oral surgical training in the School's oral surgical clinic during their second year. Clinic assignments continue during the third year, in addition to a 32-hour didactic course. The bulk of clinical training is gained in one-month clerkships in oral surgery at the Massachusetts General Hospital -a unique, live-in hospital experience. During the elective period, students may continue to work in the oral surgery clinic at the School; enroll in the Head and Neck Anatomy course (developed primarily for those wishing to specialize in oral surgery); or take an additional clerkship on the Massachusetts General Hospital Oral Surgery service, assuming increasing responsibility for pre-, intra-, and postoperative patient management.

Students are instructed in all aspects of patient care. They will become technically skilled in single and multiple extractions of erupted teeth, alveoplasty, apicoectomy, retrograde apical fillings, and extraction of tissue-impacted teeth, as well as becoming capable of managing the patient with acute odontogenic infection. Throughout the training, emphasis is placed on student's ability to perform those procedures which are appropriate to general practice, and to recognize and refer those cases which are outside the purview of the general practitioner.

The department is responsible for residency training programs at the Massachusetts General Hospital. Two tracks are offered which are designed to fulfill the specialty requirements of the Clinical Board of Oral and Maxillofacial Surgery. Five and six year tracks combine oral and maxillofacial surgery, the M.D. degree and general surgery to provide optimal training and education. The clinical program is primarily at the Massachusetts General Hospital and includes rotations at the Brigham and Women's Hospital and the Children's Hospital Medical Center.

Research activities include studies in diphenylhydantoin and craniofacial malformations, wound healing, bone grafting and bone healing.

## **COURSES**

### **M.G.H. Case Presentations**

**Course Director: Dr. Seldin. Additional faculty: members of the Department of Oral and Maxillofacial Surgery. Offered fall, Year III. Format: lecture/discussion. Evaluation: oral presentation and preparation of handouts.**

Students are randomly assigned cases to evaluate and discuss before classmates, faculty moderators, and the course director. The clinical cases selected for this course are illustrative of numerous common and some uncommon medical conditions that may complicate the delivery of dental care. The course setting provides an opportunity to review the various medical management and diagnostic dilemmas that will occur during typical clinical careers. Students are encouraged to research and discuss their cases with as much depth as possible and to prepare handouts for class participation.

### **Oral Surgery**

**Course Director: Dr. Keith. Additional faculty: members of the Department of Oral and Maxillofacial Surgery. Offered February-June of Year III. Format: lecture. Evaluation: oral presentation.**

All aspects of Oral and Maxillofacial Surgery are covered. The course begins with lectures on the basic principles of Oral Surgery, removal of teeth and suturing techniques as well as discussions on oral and facial pain and odontogenic infections and appropriate management strategies. The majority of the lectures take specific surgical conditions and describe their etiology, management and indications for surgical intervention (e.g., head and neck tumors, salivary gland disease, implants, facial fractures and deformities, temporomandibular joint disorders and preprosthetic surgery). Other lectures are devoted to the interpretation of surgical radiographs and pediatric oral surgery. Prior to the Evaluation, a Review Session is held.

## **Oral Surgery Externship**

**Course Director: Dr. Seldin. Additional faculty: members of the Department of Oral and Maxillofacial Surgery and visiting staff. Offered in Year IV. Format: lectures, conferences, rounds. Evaluation: paper and clinical performance.**

During the intensive Oral Surgery Externship at the Massachusetts General Hospital, each student is fully integrated into the life of the department. The student attends 7:00 AM rounds, observes or assists in actual oral and maxillofacial surgery cases, interviews and treats patients in the Out-Patient Unit under staff supervision, and teams up with the resident on call for specific night and weekend assignments.

The student also attends the Orthognathic Conference and Tumor Clinic and has the opportunity to observe in the Chronic Facial Pain Clinic and Temporomandibular Joint Disorders Clinic on a weekly basis. There are opportunities to observe the use of general anesthetic agents as well as intravenous and inhalation sedation agents in different clinical settings. By the end of the month the student has acquired an intimate view of the actual practice of Oral and Maxillofacial Surgery in a teaching hospital and tertiary care referral center and can determine his/her own interest in the discipline as a possible future specialization. Members of the department also have an opportunity to judge the clinical aptitude of the student as a potential resident in Oral and Maxillofacial Surgery.

## **ORAL BIOLOGY**

Paul M. Gallop, Ph.D., A.M.  
Professor of Biological Chemistry  
Department Head

### **DEPARTMENT DESCRIPTION**

The Department of Oral Biology is responsible for the predoctoral course in Oral Biology, a 40-hour course covering the anatomy, physiology, biochemistry, and growth and development of oral tissues. In addition, the course includes pertinent information on oral microbiology and immunology with particular reference to dental caries and periodontal disease.

The department is also responsible for teaching four major didactic courses for the postdoctoral student in the following areas: Oral Microbiology, Immunology, Connective Tissue and Bone, and Clinical Pharmacology.

Research activities include: connective tissue in craniofacial development; aging cells; connective tissue; collagen and elastin; connective and mineralized tissues, aging, vitamin K; microbiology of dental caries and periodontal disease; saliva and salivary proteins; immunology of dental caries; pain control agents; melanogenesis and cell regulation.

## **COURSES**

### **Oral Biology**

**Course Director: Dr. Hauschka. Additional faculty: Drs. Susi, Gallagher, Tassinari, Evans, Donoff, Keith, Tandler, Hay, Dogon, Williams, Gibbons, Tanner, van Houte, Socransky, Smith. Offered November-May, Year I. Format: lectures, labs, discussions. Evaluation: histology slide examination, written midterm and final examinations, term paper, oral presentation.**

Oral Biology is a multidisciplinary course focused on four areas: 1) developmental biology and anatomy of the tooth and its supporting tissues, 2) craniofacial development and growth, 3) biology of the oral mucosa and salivary glands, and 4) microbiology and physiology of the oral cavity. Selected additional topics include: cell biology of tooth, bone, and periodontium; biochemistry of mineralized connective tissues; wound healing in hard and soft tissues; aging; nutrition and microbial ecology; biology of caries and periodontal disease; and oral immunology. While normal function is the primary concern, selected examples of abnormal development and pathology are introduced where relevant. Discussion of basic research concepts provides a framework for integration of new information into the didactic content of the course. Oral presentations based on independent reading of research articles are required.



## **ORAL DIAGNOSIS AND ORAL RADIOLOGY**

Joseph L. Henry, D.D.S., Ph.D.  
Professor of Oral Diagnosis and Oral Radiology  
Department Head

### **DEPARTMENT DESCRIPTION**

The Department of Oral Diagnosis and Oral Radiology screens all patients in the pre- and postdoctoral clinics and monitors the assignment, progress, care, and recall of patients through the Patient Control Center. In the predoctoral curriculum the Department of Oral Diagnosis and Oral Radiology is responsible for the teaching and/or coordination of courses in Oral Diagnosis, Oral Radiology, Treatment Planning, Clinical Photography, and Student Case Presentations. Students develop their skills in diagnosis and radiological interpretations through rotations in the Oral Diagnosis and Radiology Clinics. The department jointly coordinates the Comprehensive Care Clinic during the Externship Period. In the clinic, total patient care is stressed, and emphasis is placed on management of time, planning, and appointment control.

The department coordinates the written Mock Licensure Boards and jointly coordinates the Oral Comprehensive Examinations. Clinical rotations and teaching opportunities for postdoctoral students are also offered by the department.

Members of the Oral Diagnosis and Radiology Department are involved in research on the social and economic impact of periodontal disease; radionuclide imaging and bone-scanning; the recruitment, retention and graduation of minorities; radiation practices in North American dental schools; and experimental oral carcinogenesis. Special opportunities are available for prospective and retrospective studies involving records and the delivery of care.

### **COURSES**

#### **Intraoral Photography**

Course Director: Dr. Friedman. Format: lecture, laboratory. Evaluation: clinical photography assignment.

This course is designed to introduce the student to the use of a 35mm camera for documentation of patient care. A lecture covering the basics of photography and its application to dentistry is presented, and includes a detailed description and illustration of an acceptable 35mm SLR camera. The use of mirrors and retractors is discussed and demonstrated. A laboratory period is used to demonstrate intraoral and extraoral photography and calibration of cameras. During a clinical session, students take pictures of each other and subsequently review results of their calibrations and discuss sources of error. Following the calibration exercise, each student is required to submit a set of intraoral and extraoral slides.

#### **Radiology I**

Course Director: Dr. Diederich. Offered summer of Year I. Format: lectures, laboratory. Evaluation: written examination.

Dental Radiology is organized as a series of lectures, demonstrations and slide presentations and is aimed at introducing students to the subject's many facets. At the completion of the course, students are expected to know the basic principles of the physics of x-rays; the techniques for taking, developing and mounting x-ray films; and a basic knowledge of the dangers of ionizing radiation. In addition, students are taught to read x-rays of the common abnormalities they will contend with during their professional lives. Considerable emphasis on the reading of films is done with slides.

#### **Radiology Rotations**

Course Director: Dr. Henry. Additional Faculty: departmental faculty. Offered Year III. Format: clinical rotations. Evaluation: Each rotation is evaluated and graded by faculty supervising the rotation. The final evaluation is the sum of performance at all rotations.

Students are assigned to the Radiology Clinic to prescreen patients and prescribe, take, develop, and mount x-rays of new patients; and to prepare and defend radiologic reports on patients seen. This is done under the close scrutiny and supervision of the faculty and staff assigned to the Radiology Clinic.

## Oral Diagnosis Rotations

**Course Director:** Dr. Henry. **Additional faculty:** departmental faculty. **Offered** February-July of Year III. **Format:** clinical rotations. **Evaluation:** Each rotation is evaluated and graded by faculty supervising the rotation. The final evaluation is the sum of performances at all rotations.

Students are assigned to the Oral Diagnosis Clinic to examine, screen and triage patients under the close supervision of the faculty on a one-to-one basis. Additionally, the student uses all of the data (history, x-rays, radiological reports, oral and laboratory findings, etc.) to develop a treatment plan best suited for and acceptable to the patient. The patient is consulted and counseled about the nature and cost of the treatment plan and assisted in making a decision.

The principal objectives of this rotation are to develop and sharpen the students' diagnostic and treatment planning skills, and to develop ability, style, professionalism, confidence, efficiency and effectiveness in communicating with and gaining the confidence of patients. This is expected to culminate in the patient choosing a suitable treatment plan and a patient who is satisfied that the student and HSDM are committed to serving the best interests of the patient, while rendering the best care possible and maintaining the highest ethical and professional standards.

## Treatment Planning for the Adult Patient

**Course Director:** Dr. Friedman. **Additional faculty:** Offered fall and spring semester of Year III. **Format:** lectures and case studies. **Evaluation:** written examination.

The objectives of this course are to instill in the student a philosophy of comprehensive treatment planning for the problems of the adult dentition; to develop a pattern of logical thought processes that will allow alternative treatment plans to be developed for difficult cases; to develop a concept of the interrelationship between the various specialties in dentistry; and to develop a thought process that supercedes a step-by-step outline for procedure and allows a creativity of thought in treatment planning. Students are encouraged to bring models, photographs, x-rays and other records of cases that they have been assigned in the clinic if the case is presenting difficulty in developing a satisfactory comprehensive treatment plan.

## MCD Case Presentations

**Course Director:** Dr. Henry. **Additional faculty:** departmental representatives. **Offered** spring semester of Year III. **Format:** oral case presentations by students. **Evaluation:** Each departmental representative evaluates the presentation, handouts, study models, slides, treatment plans, and responses to questions using forms provided by the course director.

The purpose of this course is to provide the student with an in-depth experience in selecting, documenting, treating (as far as possible) and preparing a suitable case using specified guidelines for presentation to classmates and faculty representatives from all clinical departments. The student is expected to prepare a comprehensive, typed and charted handout for the intended audience. After presenting the case - including slides, x-rays, study models, and handouts - the student is expected to respond to all questions by the faculty and students and to defend the ideal and alternative treatment plans which s/he has presented.

The objectives of the course are: to provide a forum for sharing the learning experiences of the clinic and to discuss problems encountered in treatment planning and to a lesser extent treatment; and to give the student additional experience in case presentations with emphasis on the comprehensive examination, history, diagnosis and ideal and alternative treatment planning.

## Comprehensive Care Clinic

**Course Director:** Dr. Henry. **Additional faculty:** Dr. Valachovic, Dr. Norris, and representatives of the various clinical departments. **Offered** September-May, Year IV. **Format:** Two half-day clinic sessions per week. **Evaluation:** Each mentor evaluates the student assigned each session, using forms prepared for this purpose. An overall assessment of Pass, Fail, or Honors is awarded at the end of the course.

The Comprehensive Care Clinic course is designed to provide a continued experience for students to practice comprehensive longitudinal care for their patients. Students are expected to improve their management of time and their confidence in handling more complicated clinical problems.



## Externship Case Presentations

**Course Director:** Dr. Henry. **Additional faculty:** departmental representatives. **Offered** Year IV. **Format:** oral case presentations by students. **Evaluation:** Same as for MCD Case Presentation, except that the case must be more complex and some treatment of the patient is required.

The Externship Case Presentation course is similar to the MCD Case Presentations course presented during the second semester of the third year of the curriculum. Since the student has gained clinical experience, these cases are expected to be more complex, and the presentations are expected to be more professional and polished. The primary purposes of this course are: to provide a forum for sharing the learning experiences of the externs at different institutions; to give the students additional experience in case presentation with emphasis on comprehensive examination, history taking, diagnosis, treatment planning and therapy for patients with oral manifestations of disease; and to allow all students to benefit from faculty and peer review and critique of their presentations and experiences.

## Oral Comprehensive Examinations

**Course Director:** Dr. Burdette. **Additional faculty:** members of each department of the dental school. **Evaluation:** Honors, Pass, Fail, using prepared forms.

Each student is required to take and pass three oral comprehensive examination on cases selected and worked up by the faculty. There are two examinations in the third year and one in the fourth year prior to taking the NERB examinations.

The objectives of these examinations are to evaluate the students' comprehensive understanding of total patient care, to provide a learning experience for each student so that s/he may gain confidence in comprehensive patient management, to provide a forum in which students may present in oral form the case history, the clinical findings and treatment planning before a critical audience, to evaluate the breadth and depth of each student's dental knowledge and determine if deficiencies exist and to initiate remedial action, if needed. Each student is provided with the case history, models, Kodachrome slides, x-rays and dental examination charts which s/he is allowed to study for one and one-half hours and from which s/he must derive a diagnosis and treatment plan. Immediately following the preparation period, each student reports to an examination team for a one hour examination period in which s/he presents the findings. Evaluations are made on prepared forms and a final grade of Honors, Pass or Fail is given.





## ORAL MEDICINE AND ORAL PATHOLOGY

Gerald Shklar, D.D.S., M.S., M.A.  
Charles A. Brackett Professor of Oral Pathology  
Department Head

### DEPARTMENT DESCRIPTION

The objectives of the predoctoral courses in Oral Medicine and Oral Pathology are to give the student a comprehensive knowledge of the pathology and management of oral diseases, skills in histologic interpretation, and an appreciation of research methodology. Predoctoral teaching consists of : 1) a course of lectures and laboratory sessions in oral pathology for second-year students, presenting the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands; 2) a course of lectures in oral medicine-oral oncology given to third-year students, presenting the diagnosis, therapy, and management of oral diseases and the oral manifestations of systemic disease (particular emphasis is placed on the management of oral cancer and presentations are given in surgery, radiation therapy, chemotherapy, reconstructive surgery, and maxillofacial prosthesis); 3) an elective course in oral histopathology with emphasis on diagnostic and surgical oral pathology; 4) an elective course in experimental oral pathology in which the student undertakes a research project that will be carried out and presented as a research paper.

Three- and four-year postdoctoral programs in oral pathology - designed to meet the oral pathology specialty board requirements - are available for qualified applicants.

Research activities of department members include: experimental carcinogenesis of oral mucosa and of salivary glands, dealing with immunologic aspects, histochemical and ultrastructural features, and effect of systemic influences on development and growth of tumors; histopathology of oral mucous membrane diseases; effect of systemic influences on oral wound healing; effect of systemic influences on development of periodontal disease; and molecular biology of oral cancer development.

## COURSES

### Oral Pathology

**Course Director:** Dr. Gallagher. **Additional faculty:** Drs. Shklar, Wong, Schwartz, Frim. **Offered** June, July Year I. **Format:** lectures, laboratory, seminars, case discussions. **Evaluation:** exams.

The Oral Pathology course offers lectures, laboratory sessions and clinical-pathologic case discussions presenting the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands. Recent and current research findings are integrated into the lecture presentations where relevant.

### Oral Medicine/Oral Oncology

**Course Director:** Dr. Shklar. **Additional faculty:** Drs. Gallagher, Sonis. **Offered** year III. **Format:** lecture. **Evaluation:** written examination.

This course of lectures in oral medicine/oral oncology is given to third-year students, presenting the diagnosis, therapy, and management of oral diseases and the oral manifestations of systemic disease. Particular emphasis is placed on the management of oral cancer and presentations are given in surgery, radiation therapy, chemotherapy, reconstructive surgery, and maxillofacial prosthesis.

## ORTHODONTICS

Coenraad F.A. Moorrees, D.D.S., A.M.  
Professor *Emeritus* of Orthodontics  
Department Head

### DEPARTMENT DESCRIPTION

The overall objective of the predoctoral course in Orthodontics is to develop sound judgment as a basis for diagnosis and treatment planning and to provide some experience in the treatment of uncomplicated malocclusions in clinical practice.

During the first phase of the program, lectures and laboratory sessions, as well as clinical rounds, are scheduled for the teaching of occlusion, classification of malocclusion, dento-facial growth and cephalometrics.



The second phase of the program is concerned with biomedical principles of tooth movement and correction of malaligned teeth during a one-week (20 hours) typodont course.

The third phase consists of clinical examination and history taking of a patient, followed by a one-week (20 hours) period for preparation and analysis of clinical records. Moreover, diagnosis and treatment planning are discussed during clinical conferences presented by the students. Subsequently, the treatment plan is discussed with the patient, appliances are constructed, and active treatment is initiated.

During the fourth phase of the program, additional patients are assigned for diagnosis and treatment. Lectures are given throughout the 14 months, during which predoctoral students are taught by the Department of Orthodontics. An extensive course syllabus is provided, which contains material including and also extending beyond the contents of the lectures.

In the second semester of the third year, Orthodontics is conducted jointly with Pedodontics and students are scheduled accordingly.

Orthodontic treatment of patients assigned to predoctoral students is continued in the Comprehensive Care Clinic conducted weekly during the fourth year in conjunction with the other clinical departments.

## **COURSES**

### **Orthodontics**

**Course Director:** Dr. Moorrees. **Additional faculty:** Drs. Lebre, Cognata, other members of the Orthodontics department. **Offered** June, July of Year II and throughout Year III. **Format:** lectures, seminars, clinic, laboratory. **Evaluation:** written examinations, seminar questioning, presentation of diagnosis and treatment plan of patients.

The predoctoral course in Orthodontics provides information on the broad spectrum of orthodontic patient care and seeks to provide a basic understanding of the principles of decision-making in patient care that will assist the generalist to collaborate with specialists in orthodontics and maxillofacial surgery for treatment of their patients.

## **PAIN CONTROL UNIT**

Joseph J. Frassica, D.D.S., M.D.  
Clinical Instructor in Dentistry  
Director of Dental Anesthesia

### **DEPARTMENT DESCRIPTION**

The Pain Control Unit is responsible for the predoctoral and postdoctoral teaching of pain and anxiety management, anaesthesiology, clinical pharmacology and emergency medicine. Teaching is provided to predoctoral students throughout the curriculum. The unit is particularly concerned with coordinating basic didactic instruction with preclinical and clinical instruction. The relevance of the basic principles of biochemistry, pharmacology, microbiology and anatomy are illustrated and emphasized throughout the pain control teaching. Particular emphasis is given to the clinical pharmacology of local anaesthetics, antibiotics, sedatives and analgesics. Educational materials used by the unit include reprints, slides, demonstrations, video tapes and films. Chairside instruction is provided throughout the student's clinical years. The technical skills of patient management, local anaesthetic administration and nitrous oxide sedation are provided in detail. Proficiency in cardiopulmonary resuscitation is a requirement for all predoctoral students.

The unit provides instruction to the postdoctoral students in clinical pharmacology. The course expands the principles of pharmacokinetics and physiologic pharmacology as applied to dental therapeutics. Elective participation courses in N<sub>2</sub>O/O<sub>2</sub> sedation and intravenous sedation are also provided to the postdoctoral students.

The Pain Control Unit is also responsible for teaching and updating students, faculty and staff in the management of emergencies within the institution. Short courses are provided at various levels of detail in cardiopulmonary resuscitation and emergency medicine. The unit is responsible for maintaining emergency kits and is "on call" for all medical emergencies at the institution.

## **COURSES**

### **Pain Control I**

**Course Director:** Dr. Frassica. **Additional faculty:** Dr. Miller. **Offered** summer of Year III. **Format:** lecture, lab. **Evaluation:** written examination.

Pain Control I provides instruction in local anesthesia of the head and neck area, including review of the anatomy, pharmacology, and physiology of local anesthesia of this region. It trains students in the management of medical emergencies in the outpatient setting, including selected Advanced Life Support techniques and certification in Basic Cardiac Life Support and teaches clinical pharmacology of Narcotic and Non-Narcotic Analgesics.

### **Pain Control II**

**Course Director:** Dr. Frassica. **Additional faculty:** Dr. Miller. **Offered** fall/winter of Year III. **Format:** lecture, lab. **Evaluation:** written examination.

Pain Control II provides instruction in general anesthesia, nitrous oxide sedation, parenteral sedation, behavioral management techniques, and advanced medical emergency management.

### **Anesthesiology Clinical Elective**

**Course Director:** Dr. Frassica. **Additional faculty:** Dr. Miller. **Format:** lecture, lab. **Evaluation:** written examination.

Students will gain clinical experience with airway management, endotracheal intubation, pharmacokinetics of inhalation anesthetics, clinical pharmacology of emergency drugs, as well as with the management of intraoperative anesthesia, preoperative evaluation and assessment of anesthetic risk, and postoperative patient management including the modalities of pain control.

## **PEDIATRIC DENTISTRY**

Howard L. Needleman, D.M.D.  
Associate Clinical Professor of Pediatric Dentistry  
Co-Department

Stephen Shusterman, D.M.D.  
Assistant Clinical Professor of Pediatric Dentistry  
Co-Department Head

### **DEPARTMENT DESCRIPTION**

The Department of Pediatric Dentistry's main goal in predoctoral education is to teach undergraduates the necessary diagnostic and clinical skills they need to provide basic preventive and restorative care for children. This includes exposure to ideas and training in the areas of growth and development, behavioral management, diagnosis and treatment planning, preventive measures, restorative procedures, pulp therapy, management of the developing occlusion, care of trauma to teeth, and care of hospital patients and handicapped children. The department is based at the Children's Hospital which allows both pre- and postdoctoral students to interact with medical professionals and to be exposed to a large variety of medical and surgical pediatric problems. Dental care on medically, emotionally and/or physically handicapped children is emphasized.

Research activities of the staff are varied. Currently, clinical studies are under way in the following areas: 1) the success of conscious sedation using chloral hydrate in pediatric dental procedures, 2) the use of caries susceptibility test in predicting pediatric patients at risk for dental caries, 3) effectiveness of criteria mapping audits on quality of care for specific pediatric dental procedures, 4) the oral findings and prognostic value of oral lesions in patients with histiocytosis, 5) developmental enamel defects of primary teeth as relates to lead exposure and other risk factors, 6) behavioral predictors for dental cooperation, 7) influence of chemotherapeutic agents in the treatment of acute lymphocytic leukemia on orofacial development, 8) prophylactic mouthrinsing in bone marrow transplant patients, 9) utilization of silver reinforced glass ionomer in restoration of primary teeth, 10) evaluation of fluoride-rinsing sealant, 11) availability of fluoride in frozen juices, 12) use of pacifiers and its effect on developing primary dentitions, 13) the efficacy of predicting pathology in the primary dentition with the use of an occlusal radiograph and 14) the dental management of cleft lip and palate patients.



## **COURSES**

### **Pediatric Dentistry**

**Course Director:** Dr. Needleman. **Additional faculty:** Drs. Shusterman, Sonis, Frank, Doykos, Bruun, Geller, Ureles, Garcia, Lindner, Edelstein, Kates, Budde and postdoctoral students. **Offered** spring of Year III. **Format:** lecture, lab. **Evaluation:** written examinations, laboratory.

The main goals of this lecture and laboratory course are to 1) expose undergraduates to the entire scope of dental care for children, 2) prepare them for adequate diagnosis of common pediatric dental problems, and 3) provide them with the clinical skills necessary to provide basic preventive and restorative care for children. Core areas include growth and development, behavioral management, diagnosis and treatment planning, preventive measures, restorative procedures, pulp therapy, management of the developing occlusion, care of trauma to teeth, and care of medically compromised patients and handicapped children.

### **Pediatric Dentistry Externship**

**Course Director:** Dr. Needleman. **Additional faculty:** Drs. Shusterman, Sonis, Frank, Doykos, Bruun, Geller, Ureles, Garcia, Lindner, Edelstein, Goldberg, Budde and postdoctoral students. **Offered** one month of Year IV. **Format:** clinic, seminars. **Evaluation:** clinical evaluation by staff members.

The goal of the rotation is to give the student a broad hands-on experience in the delivery of dental care to children. The rotation is mainly a clinical experience in the Department of Dentistry at The Children's Hospital, Boston. During the one month rotation, the student has the opportunity to work along with postdoctoral students and senior staff in providing dental care to a wide range of pediatric patients. The program includes routine preventive and restorative care as well as specialized care such as the management of traumatic injuries, developing malocclusions and exceptional children. In addition, the student is exposed to the management of children with behavioral problems using various non-pharmacologic techniques and observes pharmacologic management techniques.

The student is required to fabricate commonly used appliances in the management of developing malocclusions, as well as prepare and present the case history and treatment plan of a patient with a

complex medical/dental problem whom they have seen during the rotation.

## **PERIODONTOLOGY**

Ray C. Williams, D.M.D.  
Associate Professor of Periodontology  
Department Head

### **DEPARTMENT DESCRIPTION**

The Department of Periodontology is actively engaged in the teaching, research and patient care that focuses on preventing and arresting the progress of periodontal disease. Teaching focuses on current concepts of the infective bacterial etiology, the immunologic and inflammatory pathogenesis and the surgical and preventive treatment of gingivitis and periodontitis. Research in the department is actively engaged with examining a role for host modulation in the treatment of the disease, in the role of biological response modifiers in building new periodontal tissues and in computerized diagnostic procedures. Patient care activities treat a large variety of patients with moderate and advanced disease at the dental school and affiliated hospitals.

## **COURSES**

### **Periodontics**

**Course Director:** Dr. Howell. **Additional faculty:** Drs. Williams, Epstein, Fried, Kalis, Katz, Sullivan, Bader, Krawczyk, Hempton, Wong, Garcia. **Offered** July-June, Year III. **Format:** lectures, laboratory, clinics. **Evaluation:** written examinations, objective clinic evaluation based on performance.

Periodontics is the field of dentistry which deals with the prevention and treatment of the periodontal diseases, a group of immuno-inflammatory diseases which are responsible for the most common of the dental diseases. Gingivitis (gingival inflammation) and periodontitis (loss of the bony tooth support) are widespread in mankind and a major disease. The bacterial etiology and the pathologic mechanisms of the diseases are presented in detail. Considerable attention is given to surgical therapy of periodontal disease. Surgery includes both plastic procedures with soft tissue manipulation as well as osseous surgery with resection, shaping, and augmentation of bone. Maintenance of patients



after active periodontal therapy is a challenging, important, and oftentimes frustrating goal. Methods of achieving occlusion following periodontal therapy are also discussed. Additionally, research advances in the prevention and treatment of periodontal disease are presented and their probable roles are candidly discussed.

## **PRACTICE MANAGEMENT**

Richard W. Valachovic, D.M.D., M.P.H., M.S.  
Director of Patient Care

### **COURSES**

#### **Dental Practice Management**

**Course Director:** Dr. Valachovic. Offered fall semester of Year IV. **Format:** lecture and discussion.

This course is intended to give students a firm foundation in the principles of dental practice management so that in the future they may continue with other programs and improve the delivery of their services to the public. Topics include: choosing a type of practice, selecting a location, buying a practice, dental office design, staffing, appointment control, recall systems, bookkeeping, payment plans and collections, dental insurance, marketing, patient records, and professional ethics.

## **PREDOCTORAL RESEARCH**

Peter V. Hauschka, Ph.D.  
Program Director

### **COURSES**

#### **Year IV Research Paper**

**Course Director:** Dr. Hauschka. Additional faculty. **Required Year IV. Evaluation:** faculty review of research performance, written paper and oral presentation.

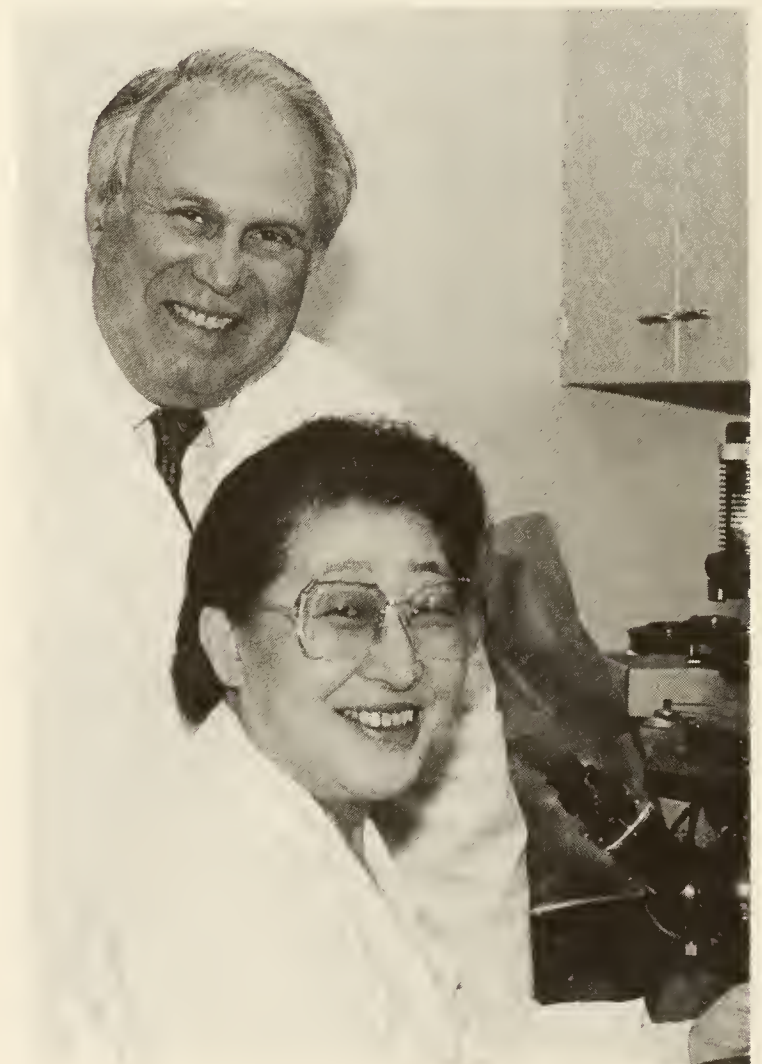
Under the guidance of a research sponsor, the student explores and develops interest in a relevant special field of either biomedical research or health care research (Year I). During Years I through III, the student learns how to read and evaluate the scientific literature, learns how to gather data and

subject it to critical analysis, develops abilities in scientific and collegial communication, and strives to make a genuine contribution to the scientific literature. This culminates in the development and presentation of a research proposal in NIH format which is presented to the faculty in Year III. A research paper and oral defense are to be completed by the end of Year IV.

#### **Year V Thesis**

**Course director:** Dr. Hauschka. Additional faculty. **Required Year V. Evaluation:** presentation and defense of research findings to faculty examination committee, comprehensive written thesis, oral presentation to faculty, students and staff.

In Year V, the student continues his/her research in the biomedical or health care fields, choosing either a more extensive development of the same research subject pursued in the previous four years, or exploring a completely new topic of interest. Thesis mentors may be chosen from Medical Area Harvard faculty or from other appropriate institutions. A thesis is presented and defended before a faculty examination committee. Manuscript publication is discussed and encouraged.





## PROSTHETIC DENTISTRY

Albert Kazis, D.M.D., M.P.H.  
Associate Clinical Professor of Prosthetic Dentistry  
Acting Department Head

### DEPARTMENT DESCRIPTION

Prosthodontics is the branch of dentistry pertaining to the restoration and maintenance of oral function, comfort and appearance, and health of the patient by the restoration of natural teeth and/or the replacement of missing teeth and contiguous oral and maxillofacial tissues with artificial substitutes.

The Department of Prosthetic Dentistry is responsible for teaching the didactic and supervising the clinical aspects of prosthetic dentistry. The Head of the Department serves to coordinate all aspects of the department. Course Directors are responsible for the specific programs of Fixed Prosthodontics, Occlusion, Complete Denture Prosthodontics, Removable Partial Denture Prosthodontics and Postdoctoral Prosthodontics. All programs are closely integrated with other departments in the school. The didactic materials and preclinical courses are presented to the students in the third year and clinical activities continue through the fourth and fifth years.

### COURSES

#### Occlusion

**Course Director:** Dr. Nishimura. **Additional faculty:** Prosthodontic Postdoctoral Fellows. **Offered** spring semester, year II. **Format:** lectures, laboratory. **Evaluation:** laboratory work, written examination.

Occlusion has been defined as the contact relationship of teeth resulting from neuromuscular control of the masticatory system. Occlusion in the educational realm deals with the anatomical, physiological, and biomechanical relationships of the masticatory system and the restoration or reproduction of the occlusal relationship to function properly in this system.

The student must achieve a high level of understanding of the healthy functioning stomatognathic system and the acceptable contact relations of the teeth during the full range of mandibular movement as well as the normal functional movements. Also, an understanding of

the instrumentation and techniques required to reproduce these relationships during restorative procedures should be achieved.

#### Complete Denture Prosthodontics

**Course Director:** Dr. M. Ehrlich. **Additional faculty:** Drs. McQueen, Pastoride, Picker, Sullivan, Zocchi, Mr. Manor. **Offered** Year III. **Format** first semester: preclinical lectures and laboratory. **Format** second semester: clinic. **Evaluation:** preclinical laboratory evaluations, clinical evaluations, written exams.

Complete denture prosthetics is a body of knowledge and skills pertaining to the restoration of the edentulous arch with a removable prosthesis. The preclinical course stresses the importance of a clinical examination and the diagnostic procedures required for an adequate treatment plan. Lectures and demonstrations are presented on impression techniques, maxillo-mandibular relationships, tooth selection, esthetic considerations, phonetics, denture materials, processing of dentures, conditioning of tissues, insertion and completion. Emphasis is constantly placed on the functional aspects of mastication.

#### Fixed Prosthodontics

**Course Director:** Dr. Kay. **Additional faculty:** Drs. H. Birnbaum, N. Birnbaum, Coffin, Gavelis, Guerrero, C. Nelson, E. Nelson, Pelletier, Tung. **Offered** Year III. **Format:** lectures, preclinical laboratory technique course, porcelain laboratory, clinic. **Evaluation:** preclinical evaluations, clinical evaluations, written exams.

The purpose of fixed prosthodontics is not only to restore a missing tooth or teeth but also to re-establish and maintain functions of the dental arches. The success of fixed prosthodontics depends on several factors:

1. An adequate treatment plan formulated from an effective diagnosis;
2. The necessary skills to perform indicated operative procedures;
3. A cooperative and understanding patient, and
4. The ability to systematically perform these procedures.

In order to accomplish these goals emphasis is placed on the following factors: diagnosis,



treatment planning, tooth preparation procedures, laboratory techniques, occlusal relationships, finish and cementation of the restorations. Emphasis is consistently placed on proper periodontal preparation of tissues and their maintenance in order that the complete restorations will be a physiological factor in maintaining the health of the tissues.

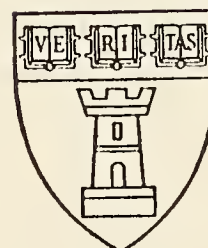
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### Removable Partial Denture Prosthodontics

**Course Director:** Dr. Kiladjian. **Additional faculty:** Drs. Guarino, Schultz, Swanson, Raphael, Weener. **Offered Year III.** **Format:** preclinical laboratory, lectures, clinic. **Evaluation:** clinical, laboratory, written exams.



The Removable Partial Dentures course is divided into two sections: the preclinical course and the clinical. In the preclinical course emphasis is placed on the technical procedures involved in the treatment of the partially edentulous patient. During this aspect of the course the student is expected to develop the didactic knowledge and technical skills of removable partial denture construction. An understanding of these basic concepts enables the student to develop the confidence for proper patient care. The student is taught the basic concepts of surveying and removable partial denture design and is constantly supervised individually by members of the department.

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# GENERAL REGULATIONS AND REQUIREMENTS

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## STUDENT RECORDS

Official student records contain admissions credentials and transcripts of current and previous academic work. They are maintained in the HSDM Office of Student Affairs. The Family Educational Rights and Privacy Act of 1974 requires that the institution protect the confidentiality of student educational records. Students have access to all parts of their records except recommendations submitted as part of the application for admission. Only the President, Dean, or the Registrar have the power to authorize the release of educational records to any external agent or to permit any such agent access to these records. Student records are accessible to faculty members, deans and staff who have a legitimate educational interest in their review.

It is the ordinary practice of HSDM to provide directory information at its discretion. Students may instruct the Office of Student Affairs to withhold the release of directory information by providing written notice at the time of registration in the fall semester. This request must be filed annually.

Transcripts will be released upon written request of the student. Enrolled students can obtain a Transcript Release Form in the Office of Student Affairs. Former students and graduates should submit a written request to the Office of Student Affairs. This service is free for all currently registered students. There is a \$2.00 charge per transcript for all former students and graduates.

## PROMOTIONS

The Committee on Promotions and Examinations (Promotions Board) is appointed by the Dean and consists of faculty representatives from the preclinical and clinical courses, the Associate Dean for Student Affairs and the Dean. The Board meets at regular intervals and considers the academic performance of the students at all levels of the academic program. The progress of the preclinical classes is reviewed at least twice per academic year; the clinical classes are reviewed

more frequently. Actions of the Board include promotion without qualification, promotion with reexamination or other modification of the schedule, repeat of a course, semester or year with specific conditions, granting leaves of absence, recommendation of withdrawal from the School, dismissal, and admittance with advanced standing.

Conformance with the rules governing courses, examinations, National Board Examinations, and promotions are generally monitored by the Associate Dean for Student Affairs, with the guidance of the Dean's Office and the Promotions Board. Except where otherwise stated, waiver of these rules requires approval of the Executive Committee. Detailed policies and guidelines governing promotion in the preclinical and clinical years are distributed each year by the Office of Student Affairs and may be obtained by contacting that office.

## WITHDRAWAL/LEAVE OF ABSENCE

Students who elect to interrupt their dental studies at the Harvard School of Dental Medicine must either take a Leave of Absence or Withdraw.

Leave of Absence: Leaves of absence will be granted rarely, and in most instances only under such circumstances as pregnancy or serious illness (verified by Harvard Health Services). All leaves of absence will be considered individually and decided on their own merit. No academic credit toward the D.M.D. degree is ordinarily granted by the Dental School to a student on leave of absence. The leave is generally granted for one academic year. Students may be required to return in advance of readmittance for remedial/preparatory instruction. A written request for leave of absence must be submitted to the Office of Student Affairs and will be reviewed for approval by the Promotions Board.

Leaves of Absence are not required for HSDM students who are pursuing the non-dental portion of recognized joint degree programs. Students enrolled in such programs will maintain dual registration at HSDM and at the other institution.

**Withdrawal.** Students who desire to leave HSDM and who are not eligible for a leave of absence must withdraw. Students who withdraw in good standing will be considered for readmission upon written request. Favorable consideration will be on a space available basis.

More detailed Withdrawal/Leave of Absence policies and guidelines may be obtained in the Office of Student Affairs.

## **REVIEW OF ACADEMIC PERFORMANCE AND PROFESSIONAL CONDUCT**

Members of the faculty of the School of Dental Medicine have the right and the responsibility to assure that each student, while enrolled in the Harvard School of Dental Medicine, demonstrates the academic performance and professional conduct appropriate to the practice of dental medicine.

**Academic Performance.** The HSDM Committee on Promotions and Examinations (Promotions Board) reviews all grades, evaluations, and reports of academic achievement. Any student who shows a deficiency in performance is notified in writing by this Board of the actions it has taken. If the student wishes to appeal the decision, he/she must reply in writing to the Board within two weeks stating reasons for reconsideration. From this point the Promotions Board may reaffirm or revise its judgment. The appeals process may continue through channels to the Dean of the School. The Dean's decision is final and binding.

**Professional Conduct.** Any instances of inappropriate behavior should be brought to the attention of the Associate Dean for Student Affairs. Such behavior might include cheating or unauthorized use of materials in academic exercises or examinations; misrepresentations, distortions or serious omissions in data or research reports; improper conduct in relation to patients or colleagues in clinical training settings; and repeated failures without adequate excuse to meet assigned obligations in professional, clinical, or research training programs. A committee appointed by the Dean reviews the complaints and decides if further action is necessary. The student is notified in writing of any decisions made. If the student wishes to appeal, a statement of the reasons for reconsideration must be submitted in writing to the Dean within two weeks. The committee may then reaffirm or revise its judgment. The appeals process may continue through channels, including personal interviews. The final decision will rest with the Dean of the School.

A more detailed policy and procedure statement can be obtained in the Office of Student Affairs.

## **GRIEVANCE**

From time to time the need arises for a prompt and equitable resolution of grievances alleging discrimination on the basis of race, color, age, religion, national or ethnic origin, sex, sexual orientation, political beliefs, handicap or veteran status. In order to respond to this need and to comply with federal regulations, procedures have been developed for dental students.

Students with a grievance concerning discrimination are urged to discuss it and seek resolution of the problem with the instructor or staff member who may be involved before going to that person's superior. If the student feels that these discussions are unsatisfactory, s/he can then present the problem to the Associate Dean for Student Affairs. If the problem has still not been resolved satisfactorily, the student can then present the problem to the Dean of the School of Dental Medicine.

A more detailed description of the HSDM grievance procedure may be obtained in the Office of Student Affairs.

## **STUDENT ATTENDANCE**

Attendance at all HSDM scheduled classes and clinics is mandatory. Unexcused absences may result in grade reduction, course failure, or dismissal.

## **TUITION PAYMENT**

It is the policy of the Harvard School of Dental Medicine that all financial obligations be met prior to registration. Fall semester term bills are mailed to entering and continuing students at least one month prior to registration. Students not receiving financial aid are expected to pay the entire term bill balance prior to the start of the school year. Detailed instructions accompany the summer term bill to assist students who have been awarded financial aid in calculating the amount to be paid with personal funds. The registration process for aid recipients will include the signing of necessary promissory notes and the endorsing of checks for student loans.



Term bills with spring semester charges are mailed to students at the end of December, and payment is due by spring term registration which is generally held during the first week of February.

Students who have not met their financial obligations to Harvard University will be denied admittance to all classes, laboratories, and clinics.



# STUDENT LIFE

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## HSDM OFFICE OF STUDENT AFFAIRS

The HSDM Office of Student Affairs, under the direction of the Associate Dean for Curriculum and Student Affairs, is responsible for all aspects of student life. The activities of the Office include: registration, financial aid management, curriculum development and implementation, academic and personal counseling, and committee representation. The administration of the National Board of Dental Examiners, and the Subject Exams of the National Board of Medical Examiners also falls under its jurisdiction. In addition, the Associate Dean and his staff coordinate the International Exchange Student Program, direct incoming student orientation, organize commencement activities, and oversee the activities of HSDM student organizations. Committed to its role as student advocate, the Office strives to keep the lines of communication open among administration, students and faculty, and to serve as an administrative and personal resource throughout the predoctoral years.

## FACILITIES

### Vanderbilt Hall

The dormitory for Harvard Medical and Dental students is Vanderbilt Hall, located on the corner of Longwood Avenue and Avenue Louis Pasteur, across the street from the quadrangle where basic science courses are taught. In addition to 300 students' rooms, Vanderbilt Hall has a dining room, common room, darkroom, woodworking shop, and two music rooms. Athletic facilities include a regulation outdoor tennis court, an indoor basketball court, racquetball courts, a self-defense room, squash courts and two weight rooms. Showers and lockers are available to students who reside off campus.

A major renovation of the interior of Vanderbilt is scheduled for the summer of 1989 and throughout the following academic year. The project is intended as a complete rehabilitation of the facility to meet resident program needs and to bring the Hall up to modern day standards of safety and comfort. The dormitory is scheduled to reopen in September, 1990.

## Quadrangle

Five marble buildings, creating a U around the Longwood Avenue Quadrangle, form the central architectural core of the Harvard Medical School. Three of the buildings have large teaching amphitheaters. Administrative offices are in Building A, located at the far end of the U; buildings B and D flank the right side of the quadrangle, and C and E the left, facing Longwood Avenue. Preclinical teaching and laboratory space for the Departments of Anatomy and Cellular Biology, Biological Chemistry and Molecular Pharmacology, Cellular and Molecular Physiology, Microbiology and Molecular Genetics, Neurobiology, Pathology, and Pathophysiology, together with research facilities and offices, are housed in these structures. Offices and laboratories of other administrative and teaching departments are located on Longwood Avenue and Huntington Avenue, in an area roughly adjacent to the quadrangle.

## Medical Education Center

The dental student's first two years of core curriculum classes are held in the laboratories, lecture halls, and conference rooms of the new Medical Education Center, located on Longwood Avenue directly across from Vanderbilt Hall. Designed with the New Pathway study method in mind, the MEC includes a three-story glass covered atrium which serves as a commons room for students and faculty, student study clusters, an amphitheater, and a suite of rooms containing video recording equipment to be used for patient interviews and examinations. The Center is also the home of two Medical School administrative units: the New Pathway Project and the Office for Educational Support.

## Countway Library

The Francis A. Countway Library of Medicine opened in June, 1965. Located at 10 Shattuck Street, it combines the resources and services of the Harvard Medical Library and the Boston Medical Library. Among libraries serving health



professional schools, it is one of the largest in the country, with recorded holdings of nearly 500,000 volumes and more than 5,000 current periodicals.

In addition to contemporary literature of biomedicine, both national and international, the Library possesses most of the important writings of medical interest published in the United States and Europe during the previous four centuries, including more than 800 incunabula (books published before 1501). Items of considerable value or great rarity are housed in the Rare Books Department, which provides modern facilities for the use of such materials.

The Countway utilizes modern technology in its services and collecting: MED-LINE and other sophisticated computerized bibliographic search services; computer-assisted instruction; extensive photocopying facilities; and audio-visual hardware and software which are provided in partnership with the Medical School's Department of Educational Programs.

The Library building combines utilitarian and aesthetic qualities with unusual success. Bookstacks are arranged around a central court, with seating and study facilities located around the periphery of the building. This promotes easy access to the modern collections, from which items can be selected and then examined nearby in a setting removed from noise and distractions.

The extensive collections of the Harvard College Library and libraries of the other faculties and departments of the University complement the total book and periodical resources available to Medical Area students, faculty, and staff. Other libraries in the Boston area, notably those of the Massachusetts Institute of Technology, augment the resources available at Harvard.

## HEALTH SERVICES

University Health Services provides comprehensive prepaid health care for the students at Harvard University. This includes physical examinations, physician visits, laboratory tests, and psychological counseling. Students are urged to choose a physician and to establish a relationship with him or her as if s/he were a family physician. A walk-in clinic is provided for acute medical and surgical situations. Payment of the University Health Services fee is mandatory for all HSDM students.

The Blue Cross/Blue Shield medical insurance plan is charged separately from the University Health Services fee and covers the costs of many types of medical care not offered at University Health Services. This insurance is compulsory for all nonimmigrant students from abroad as well as for all other students who do not have comparable insurance. Students who do have comparable insurance and who would prefer not to enroll in BC/BS must submit a waiver form prior to the time of fall registration.

Married students may opt to purchase Blue Cross/Blue Shield family insurance. It is also possible to purchase University Health Service coverage for a spouse and/or children.

## STUDENT ORGANIZATIONS

### American Association of Dental Schools

AADS is an organization of students (both dental and auxiliary) and educators whose purpose is "to promote the advancement of dental education, research, and service in all institutions that offer appropriately accredited programs for dental personnel".

HSDM AADS activities focus on discussions of issues affecting dental students all over the country such as admissions policies, student input into curriculum changes and faculty evaluation, financial aid counselling and advanced dental education. Meetings are held 4 or 5 times a year with refreshments.

Student members receive monthly issues of the *Journal of Dental Education* and *Bulletin of Dental Education* as well as any mailings by the three special interest groups to which each member may elect to belong.

### American Student Dental Association

ASDA is the student-born affiliate of the American Dental Association and has over 16,000 dental student members. Through ASDA, dental students are kept informed about current issues in dentistry (such as deduction of loan interest, malpractice insurance, free hygienist practice and denturism) and their impact on the future of the profession. Members are also informed of issues directly affecting the student: student loan programs and other available financial aid and board exam changes. Students also have the opportunity to become actively involved in the organization, which



can include externships in Washington or Chicago, or working closely with ADA staff. In addition, there is potential to interact with other dental students nationwide.

Other membership benefits include ASDA's journal *Dentistry*, the ASDA Handbook (a quick reference to all the benefits of ASDA), ASDA News, ADA News, The Journal of the American Dental Association, Board Exam reprints, a member's Mastercard, free life insurance, savings on ADA membership, Residency Guide handbooks, and more.

### **Student National Dental Association**

The SNDA was founded and incorporated as a non-profit organization in 1972 by a group of Black dental students in Pennsylvania. The Harvard Chapter of the SNDA was chartered in 1977. The founders of the SNDA sought to develop an organization that would speak to such things as recruitment and retainment of minorities in dentistry, the dental health needs of minority communities, and future issues confronting organized dentistry. SNDA's activities include: various programs in the community to provoke interest in dentistry as well as teach preventive dentistry; seminars and lectures addressing important issues in dentistry, and distribution of information about graduate programs, scholarships, loans and jobs.

### **HSDM Student Council**

The Student Council is the central organization governing student concerns at HSDM. It is composed of elected representatives from each class. Serving on the Student Council are: 2 Class Representatives and 1 Curriculum Representative from each class, and one representative each from ASDA, AADS, and SNDA. The objectives of the student council are to promote unity between the classes; to coordinate student efforts which will enhance the educational and social experiences of each student; to maintain open communication and cooperation among members of the administration, faculty, and student body; and to provide a channel to enhance alumni relations.

### **HMS/HSDM Student Council**

The HMS/HSDM Student Council serves as the student government, creating a forum for the discussion and expression of student opinions and

concerns. It provides funding for many student groups including social and athletic organizations, the student newspaper, women's and minority organizations, religious, national and special interest groups. Four representatives are elected from HMS, one from HSDM, one from HST, and one each from various student organizations.

### **ATHLETICS**

Vanderbilt Hall is the athletic center of the Harvard Medical Area due to its indoor basketball court, five squash courts, three racquetball courts, weight room and exercise room. Women's and men's locker rooms and showers are also available within the building. Various tournaments and leagues are organized throughout the year in squash, racquetball, basketball, softball and tennis. The Vanderbilt Hall Manager's office can provide more information at 732-1630.

Any Harvard School of Dental Medicine student may use the Harvard University sports facilities in Cambridge by obtaining an athletic participation sticker from the HSDM Administration Office. Other Harvard University sponsored sports include running, sailing, sculling and swimming.

### **RELIGIOUS LIFE**

Diverse houses of worship can be found near the medical area: Catholic, Protestant, Jewish, Russian Orthodox, and Greek Orthodox. In addition, there are religious student organizations sponsored by the Harvard Medical School and School of Dental Medicine, such as the Christian Medical Society and the Maimonides Medical Society. These provide fellowship, retreats, special programs, and various social activities for interested students.

### **MINORITY STUDENTS**

One finds great diversity among HSDM students and students within the medical area in general, showing Harvard's strong commitment to aggressive minority admissions and hiring practices. There are a number of university sponsored minority organizations on campus to provide support and a sense of community: the National Chicano Health Organization, Black Health Organization, Boricua Health Organization and Native American Health Organization as well as the larger Third World Caucus umbrella organization. These groups hold regular meetings to discuss relevant minority health



and medical issues and organize numerous social events such as dances, talent shows, and Martin Luther King Day celebrations.

## INTERNATIONAL STUDENTS

The Harvard School of Dental Medicine is fortunate to have students from a number of foreign countries. Harvard University's International Office was established to provide students from outside the US with visa information and to help them understand immigration regulations. It also administers the Host Family Program which matches foreign students with American families who welcome them to the US and help ease their cultural transition. The Office operates a furniture exchange during the summer and fall, providing low-cost secondhand furniture to students arriving from abroad. Its hours are Tuesday from 10 am to 2pm and 5pm to 7pm and Thursday from 10am to 2pm. For more information about either of these two programs, contact the Harvard International Office, 1350 Massachusetts Avenue, Cambridge, MA 02138 (telephone 617-495-3349).

## CHILD CARE

There are several day care centers on the Cambridge campus and in the Harvard Medical Area, the newest of which is the Harvard Medical Area Children's Center at 164 Longwood Avenue (capacity: 20 infants and toddlers). There are also a limited number of spaces available at the Roxbury Tenants of Harvard Child Care Center and at the Longwood Area Children's Center. As all are quickly filled, parents are urged to make arrangements as early as possible. For further information about day care centers, family day care, nursery, private, after school and summer programs, contact the Child Care Advisor at (617) 732-1489 or (617) 495-2851.

## HARVARD DENTAL ALUMNI ASSOCIATION

The Harvard Dental Alumni Association was established in 1871 to promote the interests of the School and its alumni. All predoctoral and postdoctoral alumni, and all faculty, may become members of the Association. The Association sponsors an annual Alumni Day at the School, publishes the *Harvard Dental Alumni Bulletin* and actively supports the student body through informal meetings with students and through the Dental Alumni Loan Fund.

## HARVARD ODONTOLOGICAL SOCIETY

The Harvard Odontological Society was founded in 1878 to provide fellowship among Harvard Dental alumni and to help keep them abreast of developments in "the Art and Science of Dentistry". All alumni and members of the faculty may apply for membership. The Society currently holds five dinner meetings each year in the Boston area, providing members the opportunity to hear a guest speaker on a topic of relevance to dentistry. Members of the graduating class are customarily invited to the Annual Meeting, and the Society supports a Student Loan Fund which it has established at the School.

## TRANSPORTATION AND PARKING

Parking scarce in the Harvard Medical Area due to the concentration of schools and hospitals. Students wishing to be included on a waiting list for a permanent parking place in a Harvard lot, may contact Parking and Security at 732-1111.

Free shuttle bus service between the Harvard Medical Area, MIT, and the Harvard Yard is available to all students, faculty and staff with valid Harvard IDs. Buses run Monday through Friday every half hour during the day (more often at rush hour), hourly at night and hourly all day Saturday. Schedules can be obtained from 221 Longwood Avenue or at the Cash Receipts Office on the third floor of Holyoke Center. For further information call the MASCO Transportation Office at 732-2384.

Boston's rapid transit system is called the "T" (short for MBTA - Massachusetts Bay Transportation Authority). Its four streetcar and subway lines radiate outward from the downtown area and provide convenient service to most points in the city. Bus service provides access to additional areas. Frequent "T" users can purchase a monthly pass which permits unlimited MBTA use. Call the MASCO transportation office at 732-2384 for more information.

# AFFILIATED TEACHING HOSPITALS AND RESEARCH CENTERS

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Predoctoral and postdoctoral students at the Harvard School of Dental Medicine take their clinical training and do research at many hospitals and centers affiliated with Harvard. Each institution provides its own unique setting for education.

## BRIGHAM AND WOMEN'S HOSPITAL

Brigham and Women's Hospital is a 1975 merger of three Harvard-affiliated teaching hospitals: the Peter Bent Brigham Hospital, the Boston Hospital for Women and the Robert B. Brigham Hospital. The new sixteen-story facility is located at the corner of Francis and Binney streets, where the operations of the three merged hospitals have been combined.

Peter Bent Brigham Hospital, dedicated in 1913 and affiliated with Harvard Medical School since that time, specialized in acute adult medical and surgical care. The Robert B. Brigham Hospital, established in 1914, was the nation's only teaching hospital devoted solely to research in and treatment of arthritis and related diseases. The Boston Hospital for Women, a 1966 merger of the Boston Lying-In Hospital (est. 1832) and the Free Hospital for Women (est. 1875) provided obstetrical and gynecological care and was a research center for human reproduction and reproductive biology.

Combining the specialties of each merged institution, the Brigham and Women's hospital is now a 680-bed facility with services in all branches of medicine, including cardiology, renal dialysis and transplantation, maternal-fetal medicine, gynecologic endocrinology and oncology, obstetrics, neonatology, rheumatoid arthritis and juvenile rheumatoid arthritis, and surgery of the hip, knee and other joints.

In support of these and other specialties, Brigham and Women's houses a number of laboratories and clinics, including cytology, chemistry, pathology, bacteriology, hormone and blood bank laboratories; X-ray and sonography departments; the Fearing Planning Center of the Joint Center for Radiation Therapy; and laboratories for diagnosis, treatment and research into immunological and rheumatoid disorders. The

hospital also maintains postgraduate continuing medical education programs, a Clinical Research Center, the Laboratory for the Analysis of Medical Practices, a home-care program and other special-care services.

Brigham and Women's Hospital is responsible for the licensure of two community-based health centers: the Brookside Park Family Life Center and the Southern Jamaica Plain Health Center. The hospital is also affiliated with the Joslin Clinic and the West Roxbury and Brockton Veterans Administration hospitals. Within the various ambulatory clinics (including a Primary Care Center) care is provided for more than 30,000 inpatients annually, 147,000 ambulatory patients and 30,000 emergency room patients. The hospital is responsible for 6,000 to 7,000 births annually, representing 40 percent of all births in Boston.

## BETH ISRAEL HOSPITAL (BOSTON)

This general hospital was founded in 1916 "to give medical and surgical aid and care, dispensary and outpatient service to the sick and disabled of any race, creed or color, and to carry on such educational, philanthropic and scientific activities and functions as are part of efficient modern hospital service."

The Beth Israel Hospital has major departments of medicine, surgery, anesthesia, obstetrics-gynecology, orthopedics, pathology, neurology, psychiatry, and radiology, each under the direction of full-time faculty members. The obstetrics and gynecology department includes labor and delivery suites and an Alternative Birth Center with two birthing rooms. Other services include dental surgery, dermatology, neonatology, neurosurgery, ophthalmology, otolaryngology, physical medicine, psychology, plastic and reconstructive surgery, radiation therapy, and urology.

With 452 beds and 52 bassinets, the hospital treats more than 21,000 inpatients and handles 145,000 outpatients and emergency visits annually. The Beth Israel Ambulatory Care Center includes a primary medical-care service, walk-in clinic, and continuity of care through the hospital's specialty



service and inpatient facilities. Laboratories for clinical investigation and basic research, including the Charles A. Dana Research Institute and the Harvard Thorndike Laboratory, seminar and lecture rooms, and a medical library are available to students in the Medical School and the School of Dental Medicine.

A major interest and capability in gerontology at Beth Israel is facilitated by the close relationship with the Hebrew Rehabilitation Center for Aged, which provides acute and chronic care, rehabilitation, and residential care for more than 500 elderly persons.

### **BROOKSIDE PARK FAMILY LIFE CENTER**

The Brookside Park Family Life Center, established in 1970, is a comprehensive community health center located in the Jamaica Plain section of Boston. The Center operates and is licensed as an affiliate of the Brigham and Women's Hospital, and has additional agreements for back-up services with the Children's Hospital Medical Center, and the Massachusetts Mental Health Center.

The goal of the Center is to provide the community with basic health and social services which are easily accessible, coordinated, and continuous, and to fill in gaps, where possible, in the broader range of health services. Care is offered by five units within the Center: Medical, Social Services, Mental Health, Speech and Hearing, and Dental. The latter includes comprehensive pedodontic and adult care, emergency dental services, and in-school dental health education programs. HSDM students may spend elective time at Brookside during their fourth year.

The Center's population of users is approximately 40% Spanish-speaking, 40% white English-speaking, and 20% black English-speaking. Over half are under 21 years of age.

### **CAMBRIDGE HOSPITAL**

The Cambridge Hospital is a 184-bed, short-term acute care hospital, owned and operated by the City of Cambridge. Affiliated with Harvard Medical School since 1965, the hospital provides one of the sites for the Introduction to Clinical Medicine course. Opportunities are also available for students within the departments of psychiatry, medicine, pediatrics, surgery, anesthesiology, and neurology.

The Cambridge Hospital serves as a pivotal base from which a comprehensive program of community-oriented health services emanates. Twelve neighborhood health centers are located throughout the city in areas of greatest need, and a broadly based outreach program provides health-education information to Cambridge residents.

### **CHILDREN'S HOSPITAL MEDICAL CENTER**

The Children's Hospital Medical Center is the largest and second oldest pediatric hospital in the United States. Founded in 1869, it is now a comprehensive center for child health care. Located on Longwood Avenue adjacent to Harvard Medical School, the hospital forms the center of a medical complex that includes an 11-story building for ambulatory care services; neonatal, cardiac, and surgical intensive care units; and the largest pediatric research facility in the world.

Basic and clinical investigations at Children's include studies in mental retardation, immunology, cystic fibrosis, neonatology, hematology, orthopedics, and neuromuscular diseases.

The hospital participates in numerous cooperative programs, including the Joint Program in Neonatology (with Brigham and Women's Hospital and Beth Israel Hospital), the Harvard-MIT Rehabilitation Engineering Center, and the Newborn Congenital Defects Identification and Referral Project, and is, in collaboration with the Sidney Farber Cancer Institute, a primary research and treatment center in pediatric oncology.

The hospital's facilities include centers for complex cardiovascular and craniofacial surgery, kidney dialysis and transplantation, and the study and treatment of children with immune deficiency diseases. Out of more than 100 outpatient clinics, those for cerebral palsy, sports medicine, and cystic fibrosis are among the world's largest.

### **DANA FARBER CANCER INSTITUTE**

Founded in 1947 as the Children's Cancer Research Foundation, the Dana Farber Cancer Institute was designated as a Comprehensive Cancer Center by the National Cancer Institute in 1973. It conducts programs of basic and clinical cancer research; inpatient care of adults and outpatient care of adults and children; as well as training, education, and community outreach services. The Institute has a combined staff of over 900 and is



housed in four adjacent facilities located in the Harvard Medical Area.

The Farber Institute is affiliated with Children's Hospital Medical Center, Brigham and Women's Hospital, and the other Harvard teaching hospitals. Each year an oncology fellowship program is provided for 26 pediatricians and internists.

### **FORSYTH DENTAL CENTER**

The Forsyth Dental Center is located at 140 The Fenway, a few blocks from the Harvard Medical Area. Founded in 1910 as the Forsyth Dental Infirmary for Children, it was the first major philanthropic enterprise in dentistry. In addition to providing dental care, especially for children, the Infirmary gave graduate dentists special training in pedodontics and established research programs leading to the prevention of oral disease.

During the 1950's, a formal affiliation with the Harvard School of Dental Medicine was established; the research component of the institution was expanded and strengthened; and the name Forsyth Dental Center was adopted to reflect a broader purpose. Activities of the Center were organized into three divisions: 1) The Forsyth Institute for Research and Advanced Study in Dentistry; 2) The Forsyth Dental Infirmary; and 3) The Forsyth School for Dental Hygienists.

In 1967, Forsyth's relationship to HSDM was changed to one that is better described as a "collaborating" institution. A number of Forsyth staff members hold faculty appointments at Harvard. HSDM students participate in research in a variety of areas within Forsyth's Research Institute.

### **MASSACHUSETTS EYE AND EAR INFIRMARY**

The Massachusetts Eye and Ear Infirmary, incorporated in 1827 and associated with the Harvard Medical School since 1869, is a voluntary specialty hospital engaged in patient care, research, and teaching in the fields of Ophthalmology and Otolaryngology. Most of the Infirmary's 174 beds are available for teaching.

Eye research at the Infirmary is conducted in various specialty laboratories and in the Howe Laboratory of Ophthalmology and the Berman-Gund Laboratory for Retinal Degenerations. Otolaryngological research is carried out in the Eaton-Peabody Laboratory of Auditory Physiology

(a joint venture of the Infirmary and the Massachusetts Institute of Technology), the Rhinolaryngology Research Laboratory, and the Electron Microscopy Laboratory.

### **MASSACHUSETTS GENERAL HOSPITAL**

Massachusetts General Hospital is the original teaching hospital of the Harvard Medical School. Founded in 1811 by faculty members Dr. James Jackson and Dr. John Collins Warren (son of Dr. John Warren, the first Professor of Anatomy and Surgery at the Medical School), the hospital opened its doors in 1821 in a building designed by the renowned architect Charles Bulfinch. The hospital has expanded to sixteen buildings, but in spite of its growth, its purposes are the same as those outlined by Drs. Jackson and Warren in their letter of 1810 circulated to the "most influential and wealthy citizens" of Boston: namely, to care for the sick; to teach those who are responsible for that care; and to conduct research into the causes, control, and cure of disease.

In addition to delivering primary care to the population living in the immediate Boston area, the MGH acts as a referral hospital for the specialized diagnosis and treatment of many illnesses of patients coming from all over the world. The hospital provides services in medicine, surgery, pediatrics, dermatology, genitourinary disease, orthopedics, gynecology, neurology, neurosurgery, anesthesia, radiology, radiotherapy, oral surgery, pathology, physical medicine, and psychiatry. All of these clinical services offer teaching and training opportunities to students of Harvard Medical and Dental Schools.

Among other educational and training programs are: nursing, dietetic internship, social work, cytotechnology, language therapy, electroencephalography, respiratory therapy, speech pathology, and pastoral care. In September, 1980, the hospital opened a division called the MGH Institute of Health Professions, which will grant bachelor's and master's degrees in several areas of allied health. There is an excellent medical library open to students from the Harvard Medical Area.

Of the more than 2,000 patient visits per day, approximately 1,750 occur in the offices of physicians and 250 in the Emergency Ward. Bed capacity is 1,092. About 30,000 patients are admitted each year. There are approximately 8,000 employees with more than 900 physicians on the active staff, 390 interns and residents, and 340 clinical and research fellows.



The history of medicine in the United States is directly linked with Massachusetts General Hospital. The U. S. Department of the Interior has designated as a National Historic Landmark the Ether Dome, where in 1846, Dr. John Collins Warren and Dr. William T. G. Morton, a dentist, first demonstrated the use of anesthesia in a surgical operation. Among other historic firsts at MGH were the identification of appendicitis (1886) and the subsequent development of abdominal cavity surgery; the first social service department in a hospital (1905); first successful replantation of a severed arm (1962); development of a practical method for freezing blood (1964); and development of a new field of medicine, photochemotherapy (1974).

In proximity to and working in close cooperation with MGH are the Massachusetts Eye and Ear Infirmary and the Shriners Burns Institute. The McLean Hospital, a psychiatric division of MGH, is in Belmont, Massachusetts.

#### **MOUNT AUBURN HOSPITAL**

Established in 1871, Mount Auburn Hospital in Cambridge is a community-based, teaching hospital serving the medical needs of that city and the surrounding area. The hospital has an active graduate and undergraduate medical education program and provides training for nursing, technical, and other allied health science students. Clinical services include medicine, surgery, obstetrics/gynecology, pediatrics, and psychiatry. Emergency care, day and evening outpatient medical services, and day surgery are offered in the hospital's Ambulatory Care Center. Mount Auburn is concerned with community health education issues and sponsors a number of educational programs on health-related topics.

#### **NEW ENGLAND DEACONESS HOSPITAL**

The New England Deaconess Hospital, founded in 1896, is a 489-bed, specialty referral hospital located one block from the Harvard Medical School. The hospital complex includes the Joslin Diabetes Treatment Unit, the Cancer Research Institute, and the Shields Warren Radiation Laboratory. The latter unit provides facilities for research in experimental radiation for the Harvard community.

The hospital is known for therapy in cancer, diabetes, and heart disease; hematology; general medicine; kidney transplants; and all types of surgery. Diagnostic and treatment facilities are

provided by the Departments of Radiology and Pathology. It is affiliated with the Joslin Clinic, the Lahey Clinic, and the Overholt Thoracic Clinic, and is a member of the Joint Center for Radiation Therapy.

The Deaconess has an active postgraduate teaching program, including medical residencies with specialization in surgery, medicine, pathology, radiology and thoracic surgery. Undergraduate teaching involves a regular rotation of second-year students for physical diagnosis. Core clinical clerkships are available to third-year students. Elective courses are also offered to fourth-year students.

#### **NEW ENGLAND REGIONAL PRIMATE RESEARCH CENTER**

The New England Regional Primate Research Center (NERPRC), located on a 140-acre tract about 35 miles from the Medical Area in Southborough, Massachusetts, is one of seven such centers established and funded by the National Institutes of Health.

The Center is an administrative component of the University with a core professional staff of 25 scientists appointed to the Faculty of Harvard Medical School. It provides laboratory and operating room facilities and serves as the animal resource for approved biomedical research studies of scientists from institutions throughout New England requiring the characteristics of any of its 20 species of non-human primates.

The objectives of the New England Regional Primate Research Center are threefold:

1. To serve as a center of basic research which is dependent upon non-human primates in the study of human health problems identifiable with national needs.
2. To serve as a center for basic and clinical research toward expanding the knowledge and understanding of primatology, including the development of models for human disease.
3. To serve as a resource to the biomedical community in providing facilities and support for programs to be conducted by scientists on the staff of Harvard and other institutions.



In addition to its facilities for the acquisition, breeding, and maintenance of a variety of primate species, the Center also has the academic resources to train professional and technical personnel in primatology and in primate husbandry.

Prominent among the research findings by Center scientists has been the implication of herpes viruses in the development of cancer in the monkey, including the contagious nature of the disease among specific species of non-human primates.

## VETERANS ADMINISTRATION MEDICAL CENTERS

The Dental Departments of seven Veterans Administration Medical Centers are affiliated with the Harvard School of Dental Medicine. These include inpatient hospitals in Bedford, Brockton, Northampton and West Roxbury, Massachusetts; Providence, Rhode Island; Manchester, New Hampshire; and an Outpatient Clinic in Boston. All seven clinics have been totally modernized within the last few years. The Centers provide general care, and have specialized units for patients with neuropsychiatric problems and spinal cord injuries. Each student spends twelve consecutive weeks at one of these sites delivering comprehensive dental care to ambulatory adult patients and providing emergency care for the hospitalized patient population.





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*Lecturer on Oral Diagnosis and Oral Radiology*

SINGLETON, Ronald, D.M.D.  
*Clinical Instructor in Oral Diagnosis and Oral Radiology*

STILLMAN, Naomi, D.D.S.  
*Clinical Assistant in Oral Diagnosis and Oral Radiology*

TEHRANI, Abolghassem, D.M.D.  
*Clinical Instructor in Oral Diagnosis and Oral Radiology*

VALACHOVIC, Richard W., D.M.D., M.P.H., M.S.  
*Lecturer in Oral Diagnosis and Oral Radiology*

WATKINS, Robert T., M.Sc., M.Ed.  
*Lecturer on Oral Diagnosis and Oral Radiology*

## ORAL PATHOLOGY

CASTRO, Ghavamzadeh Giti, D.M.D.  
*Associate in Oral Pathology*

CATALDO, Edmund, D.D.S., M.S.  
*Lecturer on Oral Pathology*

CHAUNCEY, Howard H., Ph.D., D.M.D.  
*Lecturer on Oral Pathology*

FRIM, Sumner P., D.M.D.  
*Clinical Instructor in Oral Medicine and Oral Pathology*



GALLAGHER, George, D.M.D., D.M.Sc.  
*Assistant Professor of Oral Pathology*

GIUNTA, John L., D.M.D., M.S.  
*Lecturer on Oral Pathology*

GREEN, Joanne Cannata, D.D.S.  
*Instructor in Oral Medicine and Oral Pathology*

HODOSH, Milton, D.M.D.  
*Lecturer on Oral Pathology*

KORNHAUSER, Andrija, Dr.Phil.  
*Lecturer on Oral Pathology*

MALOOF, Edward C., D.M.D., M.P.H.  
*Lecturer on Oral Pathology*

MESSADI, Diana, B.D.S., M.M.Sc., D.M.Sc.  
*Lecturer on Oral Medicine and Oral Pathology*

MEYER, Irving, D.M.D., M.Sc., D.Sc.  
*Lecturer on Oral Pathology*

NIUKIAN, Khadjik, D.D.S., M.S., D.M.D.  
*Instructor in Oral Medicine and Oral Pathology*

SCHWARTZ, Joel, D.M.D., D.M.Sc.  
*Associate Professor of Oral Pathology*

SCHWARTZ, Stanley, D.M.D.  
*Lecturer on Oral Pathology (Forensic Odontology)*

SHKLAR, Gerald, D.D.S., M.S.  
*Charles A. Brackett Professor of Oral Pathology  
Department Head*

SONIS, Stephen T., D.M.D., D.M.Sc.  
*Professor of Oral Medicine and Oral Pathology*

STOUFI, Eleana, D.D.S., M.M.Sc., Dr.Dent.  
*Visiting Lecturer on Oral Pathology*

SULLIVAN, John F., D.M.D.  
*Clinical Instructor in Oral Medicine and Oral Pathology*

TILLMAN, Hilde, D.M.D.  
*Lecturer on Oral Pathology*

WILGRAM, George F., M.D., Ph.D.  
*Lecturer on Oral Pathology*

WONG, David T., D.M.D., D.M.Sc.  
*Assistant Professor of Oral Pathology*

WOODS, Philip D., D.M.D.  
*Instructor in Oral Medicine and Oral Pathology*

## ORTHODONTICS

ANDELL, Melvin A., D.D.S.  
*Clinical Instructor in Orthodontics*

COHEN, Melvin I., D.M.D.  
*Associate Clinical Professor of Orthodontics*

DeANGELIS, Vincent, D.M.D.  
*Associate Clinical Professor of Orthodontics*

DONAHUE, Robert M., D.M.D.  
*Clinical Instructor in Orthodontics*

EVANS, Carla A., D.D.S., D.M.Sc.  
*Associate Professor of Orthodontics*

GRON, Anna Marie, D.M.D.  
*Lecturer in Orthodontics*

HILZENRATH, Stephen S., D.M.D.  
*Clinical Instructor in Orthodontics*

LEBRET, Laure M. L., D.M.D.  
*Associate Professor of Orthodontics*

MINER, R. Matthew, D.D.S.  
*Clinical Instructor in Orthodontics*

MOIN, Kambiz, D.M.D.  
*Assistant Clinical Professor of Orthodontics*

MOORREES, Coenraad F. A., D.D.S., A.M.  
*Professor Emeritus of Orthodontics  
Department Head*

MORIN, Edward M., D.M.D.  
*Assistant Clinical Professor of Orthodontics*

SPECK, Morton, D.M.D.  
*Clinical Instructor in Orthodontics*

TAYER, Barton H., D.M.D., M.Sc.D.  
*Assistant Clinical Professor of Orthodontics*

## PAIN CONTROL UNIT

FRASSICA, Joseph J., D.D.S., M.D.  
*Clinical Instructor in Dentistry  
Director of Dental Anesthesia*

## PEDIATRIC DENTISTRY

- BRUUN, Richard A., D.D.S.  
*Clinical Instructor in Pediatric Dentistry*
- BUDDE, Norman T., D.M.D.  
*Assistant Clinical Professor of Pediatric Dentistry*
- DENBESTEN, Pamela K., D.D.S., M.S.  
*Clinical Instructor in Pediatric Dentistry*
- DOYKOS, John D., D.M.D.  
*Assistant Clinical Professor of Pediatric Dentistry*
- EDELSTEIN, Burton L., D.M.D.  
*Lecturer on Pediatric Dentistry*
- FRANK, Robert A., D.M.D.  
*Clinical Instructor in Pediatric Dentistry*
- GELLER, Peter B., D.D.S.  
*Clinical Instructor in Pediatric Dentistry*
- GOLDBERG, Norman L., D.M.D.  
*Clinical Instructor in Pediatric Dentistry*
- HERTZBERG, Jack, D.M.D.  
*Clinical Instructor in Pediatric Dentistry*
- KATES, George A., D.M.D.  
*Clinical Assistant in Pediatric Dentistry*
- JAROSZ, Joseph A., D.D.S.  
*Clinical Instructor in Pediatric Dentistry*
- NEEDLEMAN, Howard L., D.M.D.  
*Associate Clinical Professor of Pediatric Dentistry*  
*Department Co-Head*
- SHUSTERMAN, Stephen, D.M.D.  
*Assistant Clinical Professor of Pediatric Dentistry*  
*Department Co-Head*
- SONIS, Andrew L., D.M.D.  
*Clinical Instructor in Pediatric Dentistry*
- URELES, Steven D., D.M.D.  
*Clinical Instructor in Pediatric Dentistry*

## PERIODONTOLOGY

- BADER, Herbert I., D.M.D.  
*Lecturer on Periodontology*
- BYRNES, Thomas P., D.D.S., M.S.  
*Instructor in Periodontology*

- EPSTEIN, Henry D., D.D.S.  
*Associate Clinical Professor of Periodontology*
- FAIELLA, Robert, D.M.D., M.M.Sc.  
*Clinical Assistant in Periodontology*
- FASCIANO, Robert, D.M.D.  
*Assistant Clinical Professor of Periodontology*
- FRIED, Ronald, D.M.D., M.M.Sc.  
*Assistant Professor of Periodontology*
- GLICK, Richard L., D.D.S.  
*Clinical Assistant in Periodontology*
- GOLDHABER, Paul, D.D.S.  
*Professor of Periodontology*
- HOWELL, T. Howard, D.D.S.  
*Assistant Professor of Periodontology*
- HEMPTON, Timothy, D.D.S.  
*Clinical Assistant in Periodontology*
- KALIS, Paul J., D.M.D.  
*Assistant Clinical Professor of Periodontology*
- KATZ, Edward, D.D.S.  
*Clinical Assistant in Periodontology*
- KRAWCZYK, Walter, D.D.S.  
*Assistant Clinical Professor of Periodontology*
- LEADERMAN, Richard, D.D.S.  
*Clinical Assistant in Periodontology*
- LEWANDO, Robert, D.D.S.  
*Clinical Assistant in Periodontology*
- LOBENE, Ralph, D.D.S., M.S.  
*Lecturer on Periodontology*
- MORRIS, Alan, D.M.D.  
*Clinical Assistant in Periodontology*
- PAYNE, Peter A., D.M.D.  
*Clinical Assistant in Periodontology*
- ROSS, Stuart, D.M.D.  
*Clinical Assistant in Periodontology*
- SALLOWAY, Elliot, D.M.D.  
*Clinical Instructor in Periodontology*
- SCHWARTZ, Arthur, D.M.D.  
*Clinical Assistant in Periodontology*



STONE, Stephen, D.M.D., M.S.  
*Assistant Clinical Professor of Periodontology*

SULLIVAN, Thomas M., D.D.S.  
*Assistant Professor of Periodontology*

WANG, Hwa-Ying, M.P.H., D.M.Sc., D.M.D.  
*Clinical Instructor in Periodontology*

WILLIAMS, Ray C., D.M.D.  
*Associate Professor of Periodontology*  
*Department Head*

WITZENBERGER, Thomas, D.D.S., M.S.D.  
*Clinical Assistant in Periodontology*

ZAGER, Noah, I., D.M.D., M.S.  
*Lecturer on Periodontology*

## **PROSTHETIC DENTISTRY**

APOTHEKER, Harvey, D.M.D.  
*Clinical Assistant in Prosthetic Dentistry*

BIRNBAUM, Herbert, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

BIRNBAUM, Nathan, D.D.S.  
*Clinical Instructor in Prosthetic Dentistry*

BOND, William, D.D.S.  
*Instructor in Prosthetic Dentistry*

CAMPBELL, Stephen, D.D.S., M.M.Sc.  
*Assistant Professor of Prosthetic Dentistry*

COFFIN, Samuel, D.M.D., M.B.A.  
*Instructor in Prosthetic Dentistry*

EHRlich, Harold, D.M.D.  
*Associate Clinical Professor of Prosthetic Dentistry*

EHRlich, Marc, D.M.D., M.M.Sc.  
*Clinical Instructor in Prosthetic Dentistry*

FISHMAN, Norton, D.M.D.  
*Assistant Clinical Professor of Prosthetic Dentistry*

FLANAGAN, David, D.M.D.  
*Clinical Assistant in Prosthetic Dentistry*

GAVELIS, Jonas, D.M.D.  
*Assistant Clinical Professor of Prosthetic Dentistry*

GETZ, Irwin, D.D.S.  
*Instructor in Prosthetic Dentistry*

GHUGASIAN, Vartan, D.M.D.  
*Associate in Prosthetic Dentistry*

GOLDBERG, Peter, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

GOLDFARB, Burton, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

GORDON, Steven, D.M.D.  
*Assistant Professor of Prosthetic Dentistry*

GRADY, Paul, D.M.D.  
*Instructor in Prosthetic Dentistry*

GREENE, Roderic, D.M.D., M.S.  
*Clinical Instructor in Prosthetic Dentistry*

GUARINO, Joseph, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

GUERRERA, Angelo, D.D.S.  
*Clinical Assistant in Prosthetic Dentistry*

KAY, George, D.M.D., M.M.Sc.  
*Clinical Instructor in Prosthetic Dentistry*

KAZIS, Albert, D.M.D., M.P.H.  
*Associate Clinical Professor of Prosthetic Dentistry*  
*Acting Department Head*

KILADJIAN, Berdj, D.D.S., D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

MORGANO, Steven, D.M.D.  
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MCQUEEN, Thomas, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

NELSON, Clement, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

NELSON, Edward, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

NISHIMURA, Ichiro, D.D.S., D.M.Sc.  
*Assistant Professor of Prosthetic Dentistry*

PASTORFIDE, Fe, D.M.D.  
*Clinical Instructor in Prosthetic Dentistry*

PELLETIER, Lionel, D.D.S., M.M.Sc.  
*Clinical Assistant in Prosthetic Dentistry*

PHAN, Lawrence Luan Van, D.M.D.  
*Clinical Assistant in Prosthetic Dentistry*

PICKER, Stanford, D.D.S.  
*Instructor in Prosthetic Dentistry*

RAPHAEL, Jeff, D.D.S.  
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RISSIN, Louis, D.M.D.  
*Assistant Professor of Prosthetic Dentistry*

ROGOFF, Gary, D.D.S., M.S.  
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SCHULTZ, Gerald, D.M.D.  
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SULLIVAN, T. Phillip, D.M.D.  
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SWANSON, Arthur, D.D.S.  
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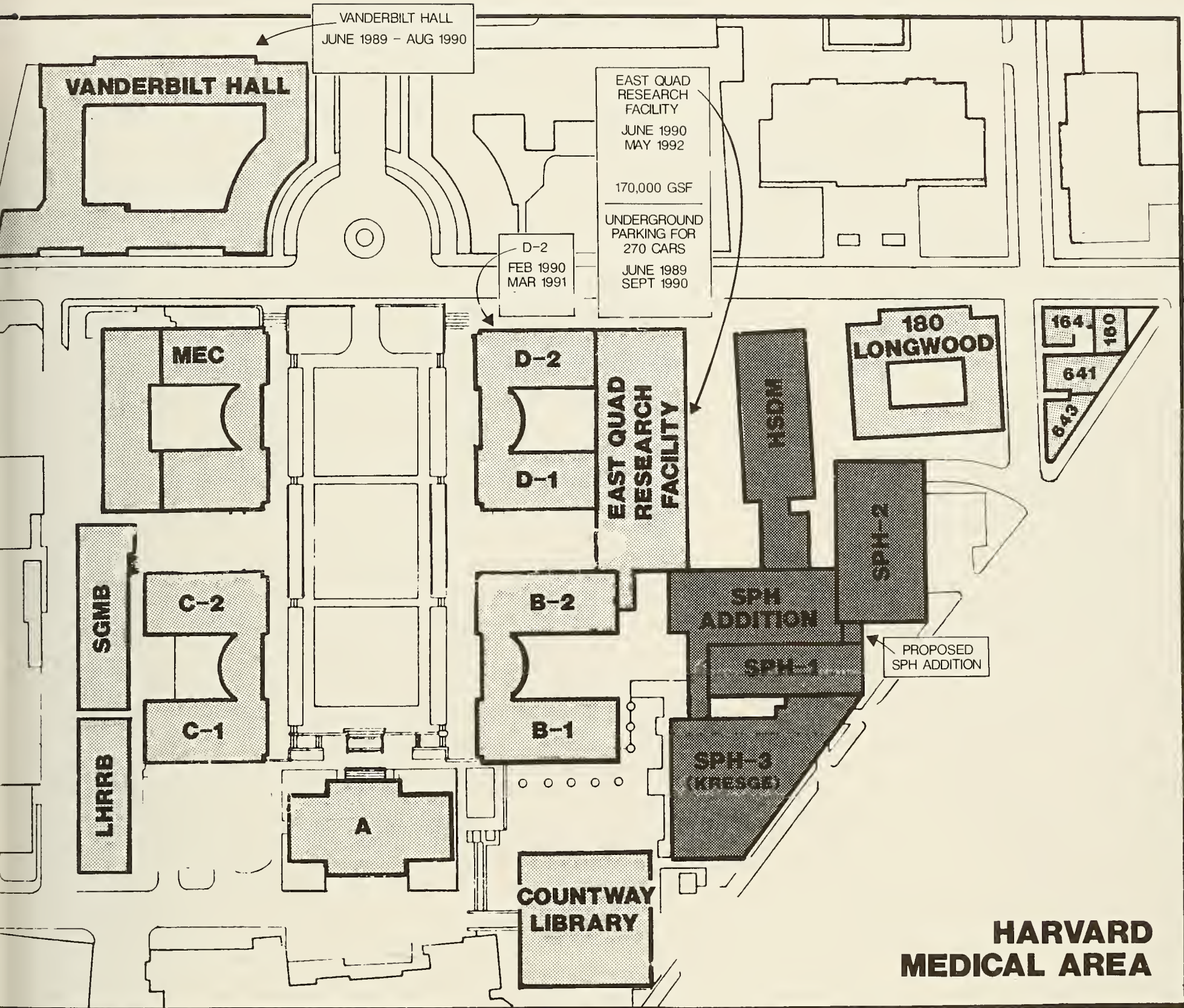
WEISS, Robert Davis, D.D.S.  
*Instructor in Prosthetic Dentistry*

WETREICH, Gary, D.D.S.  
*Clinical Instructor in Prosthetic Dentistry*

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*Photos by Steve Gilbert*









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